942

university of wisconsin-madison

water resources center

EUTROPHICATION PROGRAM

U. of ILL. LIBRARY
JUN 1 8 1973
CHICAGO CIRCLE

EUTROPHICATION:

A Bimonthly Summary of Current Literature

INDEX TO SUBJECT AND AUTHOR

These abstracts are produced by the Eutrophication Program of the University of Wisconsin Water Resources Center. The program receives support from the Office of Water Resources Research, Environmental Protection Agency, Soap and Detergent Association, Department of Agriculture, and the University of Wisconsin.

SUBJECT INDEX

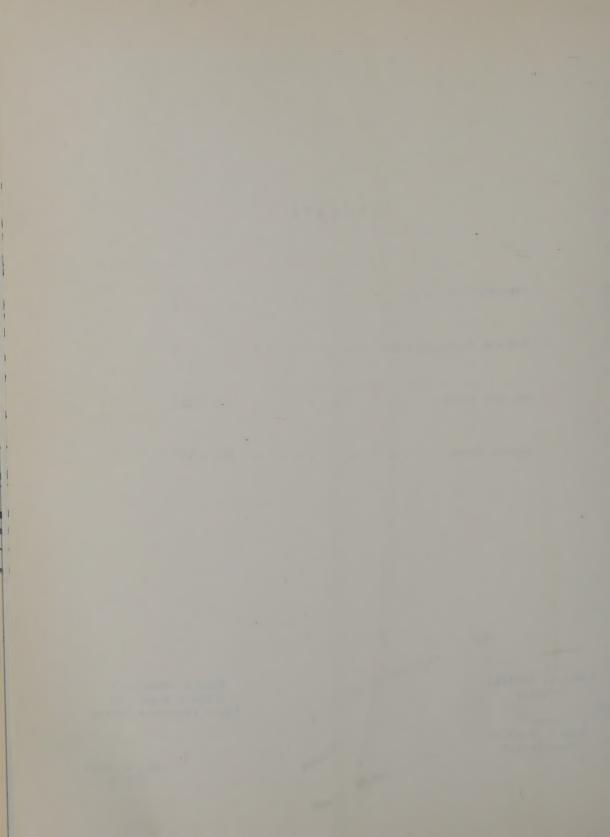
Α.	Gene	eral eral			
	1.	Popular and general articles dealing with eutrophication		3 -	4
	2.	Review papers			4
В.	The	Eutrophication Process			
	1.	Limnological studies		4 -	5
	2.	Physical properties and characteristics of lakes			
		a. Hydrodynamics		5 -	
		b. Optical properties		7 -	~
		c. Thermal properties	•	8 -	9
	3.	Chemical parameters		•	, ,
		a, General chemical studies	•	9 -	
		b. Nutrient sources		44 - 63 -	
		c. Nutrient cycles	•	03 -	107
	4.	Biological indices		108 -	111
		a. Bacteria and fungi	•	111 -	
		b. Algae		166 -	
90		c. Macrophytes		168 -	
		e. Benthos		171 -	
		f. Fish		174 -	
	5.	Models of aquatic ecosystems			
		a. Physical		175 -	176
		b. Chemical			176
		c. Biological		176 -	177
		d. Systems			177
		Line Line and the state of the			
C.	Tecl	nnological Controls			
	1.	Harvesting		177 -	178
	2.	Dredging			178
	3.	Nutrient inactivation/precipitation			178
	4.	Diversion of nutrients		178 -	179
	5.	Algicides and herbicides		179 -	180
	6.	Biological agents			180
	7.	Artificial circulation/aeration			180
	8.	Dilution/flushing ,			181
	9.	Nutrient removal from waste waters		181 -	
	10.	Land and waste management			183
D.	Ins	titutional Controls and Management Programs			
	1.	Governmental controls a. Land use regulation			183
		a. Land use regulation			183
		c. Use of nutrient materials		183 -	
	2.	Social and economic controls		200	184
	3.	Regional management programs		184 -	
	Jan 1	The partial management programs , , , , , , , , , , , , , , , , , , ,			
TILOT	TAID	ry		186 -	197

CONTENTS

Introduction	1
Subject recapitulation ,	2
Subject index , , , , , , , , , , , , , , , , , , ,	3 - 185
Author index ,	186 - 197

LeRoy G. Zweifel Director Paul D. Uttormark Project Associate Water Resources Center

John R. Luedtke Coordinator



INTRODUCTION

All the titles included in Issues No. 26 to 30 of EUTROPHICATION: A BIMONTHLY SUMMARY OF CURRENT LITERATURE are combined in a subject index outline identical to that contained in the individual bimonthly publications with the exception of subsections "a - General chemical studies," "b - Nutrient sources," "c - Nutrient cycles" of Section 3 titled "Chemical parameters" and subsection "b - Algae" of Section 4 - "Biological indices," which are further indexed by key words.

It is hoped that this cumulative index of subject and author will facilitate the search for papers on specific subjects. Other pertinent data for each paper are, of course, included in the individual bimonthly issues.

We will be grateful for your comments and suggestions.

SUBJECT RECAPITULATION

A. General

- 1. Popular and general articles dealing with eutrophication
- 2. Review papers

B. The Eutrophication Process

- 1. Limnological studies
- 2. Physical properties and characteristics of lakes
 - a. Hydrodynamics
 - b. Optical properties
 - c. Thermal properties
- 3. Chemical parameters
 - a. General chemical studies
 - b. Nutrient sources
 - c. Nutrient cycles
- 4. Biological indices
 - a. Bacteria and fungi
 - b. Algae
 - c. Macrophytes
 - d. Zooplankton
 - e. Benthos
 - f. Fish
- 5. Models of aquatic ecosystems
 - a. Physical
 - b. Chemical
 - c. Biological
 - d. Systems

C. Technological Controls

- 1. Harvesting
- 2. Dredging
- 3. Nutrient inactivation/precipitation
- 4. Diversion of nutrients
- 5. Algicides and herbicides
- 6. Biological agents
- 7. Artificial circulation/aeration
- 8. Dilution/flushing
- 9. Nutrient removal from waste waters
- 10. Land and waste management

D. Institutional Controls and Management Programs

- 1. Governmental controls
 - a. Land use regulation
 - b. Water quality criteria
 - c. Use of nutrient materials
- 2. Social and economic controls
- 3. Regional management programs

A. GENERAL

1. Po	oular and	general	articles	dealing	with	eutrophication
-------	-----------	---------	----------	---------	------	----------------

Eutrophication and the current controversy over its causes and cures	3501
Water quality problems in Dane County, Wisconsin	3502
Nutritional pollution begs for a solution	3503
Rationale, background, and development of Experimental Lake studies in Northwestern Ontario	3504
Role of phosphorus in eutrophication	3553
Lake Erie alive but changing	3621
Review of national research policy on eutrophication problems	3622
Proceedings of the conference in the matter of pollution of Lake Michigan and its tributary basin, March 23-25, 1971, Chicago, Illinois	3625
Proceedings of the conference in the matter of pollution of the interstate waters of Long Island Sound and its tributaries Connecticut-New York	3626
The effect of Las Vegas wash effluent upon the water quality in Lake Mead	3657
Minnesota's lakeshore, resources, development, policy needs, Part 1	3736
Managing our environment	3741
Eutrophication: A threat to water resources	3742
Trophic state of lakes in north central Florida	3743
Eutrophication of small reservoirs in the Great Plains	3744
Eutrophication of small reservoirs in the Great Plains	3745
The nation's rivers	3747
Paleolimnology of Lake Texcoco, Mexico. Evidence from diatoms	3749
Onondaga Lake study	3754
Nutrient removal by waterhyacinth	3914
Ecology and environmental sanitationthe phosphate controversy	3921
Strategies for control of man-made eutrophication	3922
Eutrophication: Overfertilization of lakes	3923
Problem lakes in the Unites States	3924
Water pollution in the Great Lakes Basin	3925
The condition of lakes and ponds in relation to the carrying out of treatment measures	3927

	Effects of agricultural pollution on eutrophication	3939
	Effects of agricultural pollutants on recreational uses of surface waters	3945
	ABCs of cultural eutrophication and its control: Part 2Waste-waters	3973
	Water quantity and quality studies of Vancouver Lake, Washington	4096
	Lakesrestoration and preservation	4101
	Eutrophication and aquatic ecosystems	4102
	Eutrophic conditions in water	4103
2.	Review papers	
	Eutrophication	3623
	Lake and river pollution: an annotated bibliography	3624
	A preliminary bibliography on the utilization of sewage in fish culture	3712
	A review of the factors limiting the growth of nuisance algae	3966
	B. THE EUTROPHICATION PROCESS	
1.	Limnological studies	
	Rationale, background, and development of Experimental Lake Studies in Northwestern Ontario	3504
	A hypothesis to explain differences and similarities among lakes in the Experimental Lakes Area, Northwestern Ontario	3505
	Light, temperature, and oxygen regimes of selected lakes in the Experimental Lakes Area, Northwestern Ontario	3506
	An ecological study of three freshwater ponds of Hyderabad-India. I. The environment	3627
	A description of Hutchinson Lake, Ontario	3628
	Some aspects of the biology of Lake Trawsfynydd; a power station cooling pond	3629
	Some observations on the limnology of a pond receiving animal wastes	3669
	Trophic state of lakes in north central Florida	3743
	Eutrophication of small reservoirs in the Great Plains	3745
	An ecological study of a pool subject to varying salinity (Swanpool, Falmouth). An introductory account of the topography, fauna, and flora	3748

	Maintenance of a functional environment in the lower portion of the Hudson River Estuary: an appraisal of the estuary	3750
	Lake George, Uganda. Studies on a tropical ecosystem	3751
	Limnological investigations of Texas impoundments for water quality management purposeslimnological and water quality data for the Highland Lakes, 1968	3752
	Reduced flows and the future ecology of the San Francisco Bay-Delta system	3753
	Limnological characteristics of north and central Florida lakes	3755
	Observations of freshwater ponds on Carroll Island and Gunpowder Neck, Maryland, with emphasis on the zooplankton	3756
	Lake Kinneret: the nutrient chemistry of the sediments	3816
	Primary productivity in five Salt Valley reservoirs	3861
	Productivity problems of freshwaters	3875
	Horseshoe Lake: nutrient inactivation by chemical precipitation	3918
	Problem lakes in the United States	3924
	Great Lakes ecology	3926
	The condition of lakes and ponds in relation to the carrying out of treatment measures	3927
	Chemical limnology of a developing reservoir (Lake Meredith) in the Texas Panhandle	3931
	Physical and chemical limnology of the lakes of Manitoulin Island	4104
	Environmental changes produced by cold-water outlets from three Arkansas reservoirs	4105
	The estuary of the Hudson River, U.S.A.	4106
	A hydrobiological study of the polluted River Lieve (Ghent, Belgium)	4107
	Interactions of dissolved and particulate nitrogen in lake metabo- lism	4131
	A preliminary survey of the benthic macrofauna and sediments in Lochs Etive and Creran, sea-lochs along the west coast of Scot- land	4154
2.	Physical properties and characteristics of lakes	
	a. Hydrodynamics	
	Summer circulation in western Lake Superior	350
	Aerial photographic tracing of pulp mill effluent in marine waters	350
	Wind-induced circulation in shallow water	351

Diffusion of sewage effluent from ocean outfall	351
Surface quality assessment of natural bodies of water	3514
Interpretation of results from the studies of pollution of surface flowing waters	3525
Wind driven lake circulation by the finite element method	3608
Future levels of tritium in the Great Lakesfrom nuclear power production	3609
Reaeration measurements in an estuary	3610
Proceedings of the conference in the matter of pollution of Lake Michigan and its tributary basin, March 23-25, 1971, Chicago, Illinois	3625
Proceedings of the conference in the matter of pollution of the interstate waters of Long Island Sound and its tributaries - Connecticut-New York	3626
Evaluation of waste dispersion in estuaries using fluorescent tracer dye	3630
Evaluation of estuarine circulation by aerial photography of current drogues	3631
Turbulence in Lake Huron	3632
Dispersal of Fox River water in Green Bay, Lake Michigan	3633
Documentation report FWQA dynamic estuary model	3707
Wind-generated circulation in Lakes Erie, Huron, Michigan, and Superior	3709
A comparison of computed and measured currents in Lake Superior	3711
Reduced flows and the future ecology of the San Francisco Bay-Delta system	3753
Mixing processes in Green Bay	3757
Characteristic features of estuarine circulation as represented in the Mersey estuary	3758
A float diffusion study	3759
Formation of thermocline in Great Lakes	3761
A preliminary study of the effects of water circulation in the San Francisco Bay. Part A: Some effects of fresh-water inflow on the flushing of South San Francisco Bay. Part B: Movement of seabed drifters in the San Francisco Bay estuary and the adjacent Pacific Ocean	3763
A physical-chemical study of the flushing of the Santa Barbara Basin	3764
Some factors influencing dispersion of pollutants in streams	3765

	Oceanography of the nearshore coastal waters of the Pacific North- west relating to possible pollution. Volume II	3776
	Hydrogeology of solid waste disposal sites in northeastern Illinois	3798
	Laser induced fluorescence in rhodamine B and algae	3868
	A model of the hydrology of the lakes of the lower Grand Coulee, Washington	3896
	Circulation patterns and a predictive model for pollutant distribution in Lake Erie	3897
	Water quality control through flow augmentation	3902
	Characteristics of separated storm and combined sewer flows	3904
	The dilution of an undersea sewage cloud by salt fingers	3905
	Great Lakes restoration	3928
	Movement of agricultural pollutants with groundwater	3964
	Ultraviolet radiation studies on the colonial alga, Eudorina elegans	4040
	The dynamic simulation of unsteady frictional flow in tidal estuaries	4071
	Pollution potential of some New Hampshire lakes	4074
	The mathematical modelling of a stratified estuary	4076
	Environmental simulation as a tool in a marine waste disposal study of Jamaica Bay	4078
	Outfall simulation experiment in Lake Ontario	4090
	Groundwater flow system analysis in lake environments, with management and planning implications	4100
	Physical and chemical limnology of the lakes of Manitoulin Island	4104
	The relative importance of freshwater input, temperature and tidal range in determining levels of dissolved oxygen in a polluted estuary	4108
	Migration of major constituents from lake sediments into lake water and its bearing on lake water composition	4111
	A diffusion model for Green Bay, Lake Michigan	4211
	Continuous system models of oxygen depletion in a eutrophic reservoir	4215
b. 0	Optical properties	
	Light, temperature, and oxygen regimes of selected lakes in the Experimental Lakes Area, Northwestern Ontario	3506
	Photosynthetic properties and growth of photosynthetic sulfur bacteria in lakes	3689

	Optical remote sensing of bioresources	3760
	Infrared and multispectral sensing in hydrobiological applications	3762
	Remote sensing of coastal environments using multispectral photographic techniques	3766
	On the question of introduction of purified waste water into lakes (In German with English summary)	3790
	An ecological study of the macrophytic vegetation of the Doohadhari Lake, Raipur, M.P., India. 2. Physical factors	3854
	Diurnal rhythms in netplankton and nannoplankton assimilation ratios	3882
	The measurement of our natural resources	3883
	The nature of the photosynthate in natural phytoplankton populations in relation to light quality	3894
	Optical density profiles as an aid to the study of microstratified phytoplankton populations in lakes	4012
c. T	hermal properties	
	Light, temperature, and oxygen regimes of selected lakes in the Experimental Lakes Area, Northwestern Ontario	3506
	Effects of thermal discharges on the chemical parameters of water quality and eutrophication	3509
	Forest cuttings raise temperatures of small streams in the southern Appalachians	3512
	Oceanography of the Black Sea: inorganic nitrogen compounds	3522
	Hypolimnetic oxygen depletion mechanisms in Lake Erie	3528
	Proceedings of the conference in the matter of pollution of the interstate waters of Long Island Sound and its tributaries - Connecticut-New York	3626
	An ecological study of three freshwater ponds of Hyderabad-India. I. The environment	3627
	Analysis of variations in dissolved oxygen in an impoundment in central Illinois	3641
	Primary production	3662
	Quantification of the effects of rate of temperature change on aquatic biota	3686
	Primary and secondary production in a lake heated by thermal power plant	3699
	Limnological investigations of Texas impoundments for water quality management purposes—limnological and water quality data for the Highland Lakes, 1968	3752

Onondaga Lake study	3754
Limnological characteristics of north and central Florida lakes	3755
Formation of thermocline in Great Lakes	3761
Infrared and multispectral sensing in hydrobiological applications	3762
Oceanography of the nearshore coastal waters of the Pacific North- west relating to possible pollution. Volume II	3776
An ecological study of the macrophytic vegetation of the Doohadhari Lake, Raipur, M.P., India. 2. Physical factors	3854
An artificial alteration of the seasonal cycle of the plankton dia- tom <i>Melosira italica</i> subsp. subarctica in an English lake	3881
Great Lakes restoration	3928
Chemical limnology of a developing reservoir (Lake Meredith) in the Texas Panhandle	3931
The age and growth of the largemouth bass Micropterus salmoides (Lacepede), in a thermally loaded reservoir	3987
Thermal effects on biological production in nutrient rich ponds	4008
Effect of wide temperature fluctuation on the blue-green algae of Bead Geyser, Yellowstone National Park	4046
Calefaction and phytoplankton	4059
The relative importance of freshwater input, temperature and tidal range in determining levels of dissolved oxygen in a polluted estuary	4108
Effects of low nutrient dilution water and mixing on the growth of nuisance algae	4216
The effects of artificial aeration on lake ecology	4217
Chemical parameters	
a. General chemical studies	
ACIDS	
Influence of medium pH and carbon dioxide on assimilation of some organic acids by Scenedesmus quadricauda	3810
Acid mine pollution effects on lake biology	411
AERATION	
The effects of artificial aeration on lake ecology	421
AFRICA	
Benthic fauna and sediments in the newly created Lake Kariba (Cen-tral Africa)	399

ALDRIN

Influence of Aldrin and varied oxygen concentrations on a Lake heterotrophic bacterium: growth characteristics and biosynt patterns	
ALGAE See also specific phyllum, class, subclass, order, family	, etc.
A key to the identification of the more common algae found in undertakings in Britain	water 359
Algal growth and decomposition: effects on water quality. Ph Composition, decomposition, and nutrient regeneration of alg batch culture	
Eutrophication, silica depletion, and predicted changes in alg quality in Lake Michigan	gal 364
Algal removal by alum coagulation	372
Algal growth exciters	387
Ecological studies of economic red algae. I. Photosynthesis respiration of <i>Chondrus crispus</i> (Stackhouse) and <i>Gigartina lata</i> (Stackhouse) batters	
The importance of algal cultures for the assessment of the eut phication of the Oslofjord	tro- 405
Experimental decomposition of algae in seawater and early diag	genesis 406
Algal populations in Moses Lake, Washington: temporal and spa distribution and relationship with environmental parameters	atial 417
Pollution controlled changes in algal and protozoan communities	es 417
ALKALINE	
A highly alkaline lake in Nicaragua	376
ALUM	
Algal removal by alum coagulation	372
ANALYSIS See also ASSESSMENT, DETERMINATION, ESTIMATION, MEASL METHODS, TECHNIQUES, AND TESTS	JREMENT,
BOD and COD analyses on paraffinic hydrocarbons	3530
Colorimetric determination of manganese in anoxic waters	363
Analysis of variations in dissolved oxygen in an impoundment i tral Illinois	in cen- 364.
Analysis of water for molecular hydrogen cyanide	364.
The chemical states of copper in polluted fresh water and a so of analysis to differentiate them	cheme 3641
Neutron activation analysis of sediments in western Lake Erie	3779
Direct field determination of the natural reaeration coefficient frequency response analysis	ent by 4111

ANIMAL see also CATTLE, FARM WASTES, FEED LOTS, MANURE	
Some observations on the limnology of a pond receiving animal wastes ANNELIDS	3669
The effects of varying concentrations of nutrients, chlorinity, and dissolved oxygen on polychaetous annelids	3580
Distribution of selected metals in bottom sediments, water, clams, tubificid annelids, and fishes of the middle Illinois River	3643
ANOXIC	
The distribution of cobalt, chromium, copper, iron, manganese, nick- el, and zinc in Framvaren, a Norwegian anoxic fjord	3527
Colorimetric determination of manganese in anoxic waters	3636
ASSAY(S) - BIOASSAY	
Formulation of a synthetic seawater for bioassays with Mytilus edu- lis embryos	3826
ASSESSMENT see also ANALYSIS, DETERMINATION, ESTIMATION, MEASUREMENT, METHODS, TECHNIQUES, and TESTS	
Surface quality assessment of natural bodies of water	3514
Colorimetric determination of manganese in anoxic waters	3636
A technical assessment of current water quality conditions and factors affecting water quality in the upper Potomac Estuary	3658
Assessment of surface water quality by a single index of pollution	3777
The importance of algal cultures for the assessment of the eutro- phication of the Oslofjord	4058
An assessment of the relative importance of several chemical sources to the waters of a small upland catchment	4115
BACTERIA	
Studies on freshwater bacteria: factors which influence the population and its activity	3679
Influence of Aldrin and varied oxygen concentrations on a Lake Erie heterotrophic bacterium: growth characteristics and biosynthetic patterns	3680
BARK	
Toxicity and oxygen demand of decaying bark	3531
BASIN(S)	
Proceedings of the conference in the matter of pollution of Lake Michigan and its tributary basin, March 23-25, 1971, Chicago, Illinois	3625
A physical-chemical study of the flushing of the Santa Barbara Basin	3764

BAY(S)	
Distribution and abundance of planktonic crustacea in ponds near Georgian Bay (Ontario, Canada) in relation to hydrography and water chemistry	3563
Dispersal of Fox River water in Green Bay, Lake Michigan	3633
Nutritional ecology and community structure of the phytoplankton of Green Bay	3664
A preliminary study of the effects of water circulation in the San Francisco Bay. Part A. Some effects of fresh-water inflow on the flushing of south San Francisco Bay estuary and the adjacent Pacific Ocean	376
A diffusion model for Green Bay, Lake Michigan	421
Pollution of the navigable waters of Dade County, Florida, and tri- butaries, embayments, and coastal waters	4220
BELGIUM	
A hydrobiological study of the polluted River Lieve (Ghent, Belgium)	4107
BENTHOS - BENTHIC	
Procedures for determining the effects of dredged sediments on biotabenthos viability and sediment selectivity tests	3520
Effects of organic enrichment on benthic fauna in a tidal river	3693
Benthic fauna and sediments in the newly created Lake Kariba (Central Africa)	3999
BICARBONATE	
Copper/bicarbonate equilibria in solutions of bicarbonate ion at concentrations similar to those found in natural water	3533
BIOCHEMICAL OXYGEN DEMAND	
A rapid biochemical oxygen demand test suitable for operational control	3520
BOD and COD analyses on paraffinic hydrocarbons	3536
Identification of mathematical models for DO and BOD concentrations in polluted streams from noise corrupted measurements	3708
BIOGEOCHEMISTRY	
Biogeochemistry of lakes: major substances BIOLOGICAL - BIOLOGY	411(
Aquatic biology and the pulp and paper industry	3929
Acid mine pollution effects on lake biology	4114

BIOSYNTHESIS Influence of Aldrin and varied oxygen concentrations on a Lake Erie 3680 heterotrophic bacterium: growth characteristics and biosynthetic patterns BIOTA 3829 The effect of inorganic sediment on stream biota BORON 3603 Growth of Chlorella in relation to boron supply BOTTOM SEDIMENTS see also MUD. SEDIMENTS 3515 Chemical characterization of bottom sediments Bottom sediments of the lakes of various trophic types 3529 3530 A review of studies on the bottom sediments of lakes 3639 Chemical characterization of pond sediments 3643 Distribution of selected metals in bottom sediments, water, clams, tubificid annelids, and fishes of the middle Illinois River 3769 Influence of organic matter on some characteristics of aquatic soils Neutron activation analysis of sediments in western Lake Erie 3779 3789 Bottom deposits 4112 The oxygen uptake demand of resuspended bottom sediments BRITAIN A key to the identification of the more common algae found in water 3592 undertakings in Britain CALANOIDS Natural chelators -- an indication of activity with calanoid copepod 3840 Euchaeta japonica CALCAREOUS Fractionation of inorganic phosphate in calcareous lake sediments 3733 CANADA Distribution and abundance of planktonic crustacea in ponds near 3563 Georgian Bay (Ontario, Canada) in relation to hydrography and water chemistry A hypothesis to explain differences and similarities among lakes 3505 in the Experimental Lakes Area, Northwestern Ontario Chemistry of surface sediments of sixteen lakes in the Experimental 3517 Lakes Area, Northwestern Ontario Zoobenthos of fifteen lakes in the Experimental Lakes Area, North-3567

western Ontario

CANADA (Continued)	
Preliminary chemical characterization of waters in the Experimental Lakes Area, Northwestern Ontario	3634
Chemical factors involved in the control of phytoplankton production in the Experimental Lakes Area, Northwestern Ontario	3665
Distribution of trace elements and chlorophyll $lpha$ in Lake Ontario	3770
Nutrients in Lake Ontario	3818
CARBON	
A conductimetric method for the determination of total inorganic and particulate organic carbon fractions in freshwater	3638
A pH - carbon dioxide method for measuring aquatic primary productivity	3782
Influence of medium pH and carbon dioxide on assimilation of some organic acids by Scenedesmus quadricauda	3810
The role of carbon in hard-water marl lakes	4140
Phytoplankton photosynthesis, micronutrient interactions, and inor- ganic carbon availability in a soft-water Vermont lake	4175
CARBONATE	
Carbonate equilibria in Lake Erie	3778
CHELATORS	
Natural chelatorsan indication of activity with calanoid copepod Euchaeta japonica	3840
CHEMICAL OXYGEN DEMAND	
BOD and COD analyses on paraffinic hydrocarbons	3536
CHEMICAL(S)	
Effects of thermal discharges on the chemical parameters of water quality and eutrophication	350 9
Chemical characterization of bottom sediments	3515
Chemical equilibria of iodine in Great Lakes waters	3535
Development of physico-chemical and microbiological characteristics preceding summer stagnation in a reservoir	3541
Preliminary chemical characterization of waters in the Experimental Lakes Area, Northwestern Ontario	3634
Chemical characterization of pond sediments	3639
The chemical states of copper in polluted fresh water and a scheme of analysis to differentiate them	3648

HEMICAL(S) (Continued)	
Chemical factors involved in the control of phytoplankton production in the Experimental Lakes Area, Northwestern Ontario	3665
Influence of Aldrin and varied oxygen concentrations on a Lake Erie heterotrophic bacterium: growth characteristics and biosynthetic patterns	3680
Chemical processes for phosphate removal	3720
A physical-chemical study of the flushing of the Santa Barbara Basin	3764
Influence of organic matter on some characteristics of aquatic soils	3769
Changes in the chemical composition of sediments of Lake Washington, 1958-1970	3817
Effects of chemicals on aquatic life	3930
Chemical limnology of a developing reservoir (Lake Meredith) in the Texas Panhandle	3931
Chemical and physical findings from pollution studies on the East Gallatin River and its tributaries	3938
Physical and chemical limnology of the lakes of Manitoulin Island	4104
The chemical investigation of recent lake sediments from Wisconsin lakes and their interpretation	4109
An assessment of the relative importance of several chemical sources to the waters of a small upland catchment	4115
CHEMISTRY	
Chemistry of surface sediments of sixteen lakes in the Experimental Lakes Area, Northwestern Ontario	3517
Distribution and abundance of planktonic crustacea in ponds near Georgian Bay (Ontario, Canada) in relation to hydrography and water chemistry	356
Chemistry of natural watersIV. Saturation pH value	364
Chemistry of natural watersV	377
Chemistry of natural watersVI	377
Lake Kinneret: the nutrient chemistry of the sediments	381
Chemistry of sediment in water	395
CHLORELLA	
Growth of Chlorella in relation to boron supply	360
CHLORIN	
A quantitative method for the determination of chlorin pigments in Great Lakes sediment	377

CHLORINATED HYDROCARBON see HYDROCARBON CHLORINITY 3580 The effects of varying concentrations of nutrients, chlorinity, and dissolved oxygen on polychaetous annelids CHI OROPHYLL Distribution of trace elements and chlorophyll α in Lake Ontario 3770 3772 A quantitative method for the determination of chlorin pigments in Great Lakes sediment **CHONDRUS** 4045 Ecological studies of economic red algae. I. Photosynthesis and respiration of Chondrus crispus (Stackhouse) and Gigartina stellata (Stackhouse) batters CHROMIUM 3527 The distribution of cobalt, chromium, copper, iron, manganese, nickel, and zinc in Framvaren, a Norwegian anoxic fjord CIRCULATION 3763 A preliminary study of the effects of water circulation in the San Francisco Bay. Part A. Some effects of fresh-water inflow on the flushing of south San Francisco Bay estuary and the adjacent Paci-Circulation patterns and a predictive model for pollutant distribu-3897 tion in Lake Erie COAGULATION 3725 Algal removal by alum coagulation COASTS see also SHORES 3776 Oceanography of the nearshore coastal waters of the Pacific Northwest relating to possible pollution. Volume II 422 Pollution of the navigable waters of Dade County, Florida, and tributaries, embayments and coastal waters COBALT The distribution of cobalt, chromium, copper, iron, manganese, nick-3527 el, and zinc in Framvaren, a Norwegian anoxic fjord see also ANALYSIS, ASSESSMENT, DETERMINATION, ESTIMATION, MEASUREMENT, METHODS, TECHNIQUES, AND TESTS Colorimetric determination of manganese in anoxic waters 3636 COMMUNITIES see also POPULATIONS Nutritional ecology and community structure of the phytoplankton of 3664 Green Bay

Pollution controlled changes in algal and protozoan communities

4179

CONDUCTIMETRY

	A conductimetric method for the determination of total inorganic and particulate organic carbon fractions in freshwater	3638
C(DNNECTICUT	
	Proceedings of the conference in the matter of pollution of the interstate waters of Long Island Sound and its tributaries - Connecticut-New York	3626
C	ONTAMINANTS see also POLLUTION	
	A case study of microorganic contaminants in river water	3591
C	ONTROL	
	A rapid biochemical oxygen demand test suitable for operational control	3526
	The control of eutrophication	3614
	Laboratory tests for plant operation control and stream quality measurement	3635
	Chemical factors involved in the control of phytoplankton production in the Experimental Lakes Area, Northwestern Ontario	3665
	Water quality control through flow augmentation	3902
	Pollution controlled changes in algal and protozoan communities	4179
С	ONVOLUTION	
	Convolution approach to the solution for the dissolved oxygen bal- ance equation in a stream	3516
C	COPEPODS	
	Natural chelatorsan indication of activity with calanoid copepod Euchaeta japonica	3840
C	COPPER	
	The distribution of cobalt, chromium, copper, iron, manganese, nickel, and zinc in Framvaren, a Norwegian anoxic fjord	3527
	Copper/bicarbonate equilibria in solutions of bicarbonate ion at concentrations similar to those found in natural water	3533
	The chemical states of copper in polluted fresh water and a scheme of analysis to differentiate them	3648
	Alterations in oxygen consumption by bluegills exposed to sublethal treatment with copper	3847
(CREEK see also STREAMS	
	Report on the effects of the discharge of the Madison Metropolitan Sewerage District's waste water effluents on the Badfish Creek, Yahara and Rock Rivers	391

CRUSTACEA	
Distribution and abundance of planktonic crustacea in ponds near Georgian Bay (Ontario, Canada) in relation to hydrography and water chemistry	356
Distribution of selected metals in bottom sediments, water, clams tubificid annelids, and fishes of the middle Illinois River	364
Shrimps in relation to oxygen depletion and its ecological signi- ficance in a polluted estuary	383
CULTURE(S)	
Algal growth and decomposition: effects on water quality. Phase II. Composition, decomposition, and nutrient regeneration of algae in batch culture	359
Formulation of a synthetic seawater for bioassays with Mytilus edu- lis embryos	382
The importance of algal cultures for the assessment of the eutro- phication of the Oslofjord	405
CYANIDE	
Analysis of water for molecular hydrogen cyanide	364
DECOMPOSITION	
Toxicity and oxygen demand of decaying bark	353
Algal growth and decomposition: effects on water quality. Phase II. Composition, decomposition, and nutrient regeneration of algae in batch culture	359
Experimental decomposition of algae in seawater and early diagenesis DELAWARE	406
Water quality and plankton ecologythe Christina River, Delaware	405
DENSITOMETRY See also ANALYSIS, ASSESSMENT, DETERMINATION, ELIMINATION, MEASUREMENT, METHODS, TECHNIQUES, AND TESTS	
Recording densitometry of X-radiographs for the study of cryptic laminations in the sediment of Lake Washington	393
DETERMINATIONS See also ANALYSIS, ASSESSMENT, ELIMINATIONS, MEASUREMENT, METHODS, TECHNIQUES, AND TESTS	
Procedures for determining the effects of dredged sediments on biota- benthos viability and sediment selectivity tests	352
Colorimetric determination of manganese in anoxic waters	363

A conductimetric method for the determination of total inorganic and

A quantitative method for the determination of chlorin pigments in

particulate organic carbon fractions in freshwater

Great Lakes sediment

3638

377

DETERMINATIONS (Continued)	
Oxidation-reduction determinations at the mud-water interface	3936
The relative importance of freshwater input, temperature, and tidal range in determining levels of dissolved oxygen in a polluted estuary	4108
Direct field determination of the natural reaeration coefficient by frequency response analysis	4113
DIAGENESIS	
Experimental decomposition of algae in seawater and early diagenesis DIFFUSION	4064
A diffusion model for Green Bay, Lake Michigan DISSOLVED OXYGEN	4211
Convolution approach to the solution for the dissolved oxygen bal- ance equation in a stream	3516
Preliminary investigation of the low dissolved oxygen concentrations that exist in Long Lake located near Spokane, Washington	3518
An estimation of the minimum level of dissolved oxygen in water required for normal life of fish	3571
The effects of varying concentrations of nutrients, chlorinity, and dissolved oxygen on polychaetous annelids	3580
Analysis of variations in dissolved oxygen in an impoundment in central Illinois	3641
Average dissolved oxygenmeasurement and water quality significance	3647
Optimization of dissolved oxygen measurements	3771
The relative importance of freshwater input, temperature and tidal range in determining levels of dissolved oxygen in a polluted estuary	4108
ISTRIBUTION	
The distribution of cobalt, chromium, copper, iron, manganese, nick- el and zinc in Framvaren, a Norwegian anoxic fjord	3527
Distribution and abundance of planktonic crustacea in ponds near Georgian Bay, (Ontario, Canada) in relation to hydrography and water chemistry	3563
Distribution of selected metals in bottom sediments, water, clams, tubificid annelids, and fishes of the middle Illinois River	3643
Distribution of trace elements and chlorophyll $lpha$ in Lake Ontario	3770
Circulation patterns and a predictive model for pollutant distribu- tion in Lake Erie	3897
Algal populations in Moses Lake, Washington: temporal and spatial distribution and relationship with environmental parameters	4178

fic Ocean

Water quality variations in the Broadkill Estuary

DIURNAL	
An automated system for multiple recording of diurnal pH	406
DREDGING	
Procedures for determining the effects of dredged sediments on biota- benthos viability and sediment selectivity tests	352
EFFLUENTS	
The effect of Las Vegas wash effluent upon the water quality in Lake Mead	365
In support of clean waterdisposing of effluents from film process- ing	353
Report on the effects of the discharge of the Madison Metropolitan Sewerage District's waste water effluents on the Badfish Creek, Yahara and Rock Rivers	391
ENGINEERING	
Engineering considerations of eutrophic water body	377
ENRICHMENT	
The influence of suspended microscopic substances on the metabolic activities of microorganisms responsible for biological enrichment of water	357
Effects of organic enrichment on benthic fauna in a tidal river	369
EQUILIBRIUM	
Copper/bicarbonate equlibria in solutions of bicarbonate ion at con- centrations similar to those found in natural water	353
Chemical equilibria of iodine in Great Lakes waters	353
Carbonate equilibria in Lake Erie	377
ESTUARINE - ESTUARY	
Optimal estuarine water quality management	408
Reaeration measurements in an estuary	361
A technical assessment of current water quality conditions and factors affecting water quality in the upper Potomac Estuary	365
A preliminary study of the effects of water circulation in the San Francisco Bay. Part A. Some effects of freshwater inflow on the flushing of south San Francisco Bay Estuary and the adjacent Paci-	376

3787

ESTUARINE-ESTUARY (Continued)	
A water resource - water supply study of the Potomac Estuary	3799
Shrimps in relation to oxygen depletion and its ecological significance in a polluted estuary	3835
A comparison of the effect of surface runoff and sewage dis- charge upon the water quality of a subtropical estuary	3979
Nutrient flux in estuaries	4132
The relative importance of freshwater input, temperature and tidal range in determining levels of dissolved oxygen in a polluted estuary	4108
EUTROPHICATION	
Engineering considerations of eutrophic water body	3775
Comparison of mercury levels in an oligotrophic and a eutrophic lake	3932
Effects of thermal discharges on the chemical parameters of water quality and eutrophication	3509
The role of inorganic ions in the eutrophication of farm ponds	3549
The control of eutrophication	3614
Eutrophication, silica depletion, and predicted changes in algal quality in Lake Michigan	3646
Eutrophication and the oxygen economy of streams	3935
The importance of algal cultures for the assessment of the eutro-phication of the Oslofjord	4058
Continuous system models of oxygen depletion in a eutrophic reservoir	4215
FAUNA	
Effects of organic enrichment on benthic fauna in a tidal river	3693
Benthic fauna and sediments in the newly created Lake Kariba (Central Africa)	3999
Stream faunal recovery after manganese strip mine reclamation	3856
FISH	
An estimation of the minimum level of dissolved oxygen in water required for normal life of fish	3571
Measurement of pollutant toxicity to fish III. Sublethal effects and safe concentrations	3688
Distribution of selected metals in bottom sediments, water, clams, tubificid annelids, and fishes of the middle Illinois River	3643
Alterations in oxygen consumption by bluegills exposed to sub- lethal treatment with copper	3847
FJORD	
The distribution of cobalt, chromium, copper, iron, manganese, nickel, and zinc in Framvaren, a Norwegian anoxic fjord	3527

FJORD (Continued)	
The importance of algal cultures for the assessment of eutro- phication of the Oslofjord	4058
FLORIDA	
Trophic state of lakes in north central Florida	3743
Pollution of the navigable waters of Dade County, Florida, and tributaries, embayments and coastal waters	4226
FLUSHING	
A preliminary study of the effects of water circulation of the San Francisco Bay, Part A. Some effects of fresh-water inflow on the flushing of south San Francisco Bay Estuary and the ad- jacent Pacific Ocean	3763
A physical-chemical study of the flushing of the Santa Barbara Basin	3764
FRESHWATER see also LIMNOLOGY	
An ecological study of three freshwater ponds of Hyderabad, India. In The environment	3627
A conductimetric method for the determination of total inorganic and particulate organic carbon fractions in freshwater	3638
Studies on freshwater bacteria: factors which influence the population and its activity	367 9
A preliminary study of the effects of water circulation in the San Francisco Bay, Part A. Some effects of freshwater inflow on the flushing of south San Francisco Bay Estuary and the ad- jacent Pacific Ocean	3763
The relative importance of freshwater input, temperature and tidal range in determining levels of dissolved oxygen in a polluted estuary	4108
GIGARTINA	
Ecological studies of economic red algae. I Photosynthesis and respiration of <i>Chondrus crispus</i> (Stackhouse) and <i>Gigartina stellata</i> (Stackhouse) batters	4045
GROWTH	
Algal growth and decomposition: effects on water quality, Phase II. Composition, decomposition, and nutrient regeneration of algae in batch culture	3596
Growth of Chlorella in relation to boron supply	3603
Influence of Aldrin and varied oxygen concentrations on a Lake Erie heterotrophic bacterium. Growth characteristics and bio- synthetic patterns	3680
Algal growth exciters	3874

HARD WATER	
The role of carbon in hard water marl lakes	4140
HETEROTROPHIC	
Influence of Aldrin and varied oxygen concentrations on a Lake Erie heterotrophic bacterium: growth characteristics and bio- synthetic patterns	3680
HYDROBIOLOGY	
A hydrobiological study of the polluted River Lieve (Ghent, Bel-gium)	4107
HYDROCARBONS	
Chlorinated hydrocarbon, microparticulate effects on microorganism isolated from Lake Erie	s 3576
BOD and COD analyses on paraffinic hydrocarbons	3536
HYDROGEN	
Analysis of water for molecular hydrogen cyanide	3644
HYDROGEN ION CONCENTRATION see pH	
HYDROGEOLOGY	0700
Hydrogeology of solid waste disposal sites in northeastern Illinoi	.s 3/98
HYDROGRAPHY	3563
Distribution and abundance of planktonic crustacea in ponds near Georgian Bay (Ontario, Canada) in relation to hydrography and water chemistry	2003
HYDROLOGY	
A model of the hydrology of the lakes of the Lower Grand Coulee, Washington	3896
HYPOLIMNION	
Hypolimnetic oxygen depletion mechanisms in Lake Erie	3528
ILLINOIS	
Proceedings of the conference in the matter of pollution of Lake Michigan and its tributary basin, March 23-25, 1971, Chicago, Illinois	3 625
Analysis of variations in dissolved oxygen in an impoundment in central Illinois	3641
Distribution of selected metals in bottom sediments, water, clams tubificid annelids, and fishes of the middle Illinois River	, 3643
Dynamics of nutrient concentrations in the Illinois River	3788
Hydrogeology of solid waste disposal sites in northeastern Illinois	3798
IMPOUNDMENTS see also LAKES, RESERVOIRS	
Analysis of variations in dissolved oxygen in an impoundment in central Illinois	3641

IMPOUNDMENTS (Continued)	
Limnological investigations of Texas impoundments for water quality management purposes limnological and water quality data for the Highland Lakes, 1968	3752
INDIA	
An ecological study of three freshwater ponds of Hyderabad, India. I. The environment	3627
INORGANIC	
The role of inorganic ions in the eutrophication of farm ponds	3549
A conductimetric method for the determination of total inorganic and particulate organic carbon fractions in freshwater	3638
Sorption of inorganic phosphate by lake sediments	3666
Fractionation of inorganic phosphate in calcareous lake sediments	3733
A review of literature on inorganic nitrogen metabolism in micro- organisms	3809
The effect of inorganic sediment on stream biota	3829
Phytoplankton photosynthesis, micronutrient interactions, and inorganic carbon availability in a soft water Vermont lake	4175
IODINE	
Chemical equilibria of iodine in Great Lakes waters	3535
IONS	
Copper/bicarbonate equilibria in solutions of bicarbonate ion at concentrations similar to those found in natural water	3533
The role of inorganic ions in the eutrophication of farm ponds IRON	3549
The distribution of cobalt, chromium, copper, iron, manganese, nickel, and zinc in Framvaren, a Norwegian anoxic fjord	3527
LAKES see also IMPOUNDMENTS, RESERVOIRS	
Water quality study of the Poplar River, Douglas County, Wisconsin - tributary to Lake Superior	3513
Preliminary investigation of the low dissolved oxygen concentra- tions that exist in Long Lake located near Spokane, Washington	3518
Method for measuring mineralization in lake sediments	3523
Hypolimnetic oxygen depletion mechanisms in Lake Erie	3528
Chlorinated hydrocarbon, microparticulate effects on micro- organisms isolated from Lake Erie	3576
Proceedings of the conference in the matter of pollution of Lake Michigan and its tributary basin, March 23-25, 1971, Chicago, Illinois	3625
Dispersal of Fox River water in Green Bay, Lake Michigan	3633
The diversity of pigments in lake sediments and its ecological	3645

LAKES (Continued)

Eutrophication, silica depletion, and predicted changes in algal quality in Lake Michigan	3646
The effect of Las Vegas wash effluent upon the water quality in Lake Mead	3657
Sorption of inorganic phosphate by lake sediments	3666
Influence of Aldrin and varied oxygen concentrations on a Lake Erie heterotrophic bacterium: growth characteristics and bio- synthetic patterns	3680
Fractionation of inorganic phosphate in calcareous lake sediments	3733
Lake George, Uganda. Studies on a tropical ecosystem	3751
Onondaga Lake study	3754
A highly alkaline lake in Nicaragua	3767
Distribution of trace elements and chlorophyll $lpha$ in Lake Ontario	3770
Carbonate equilibria in Lake Erie	3778
Neutron activation analysis of sediments in western Lake Erie	3779
Survey of phytoplankton productivity and nutrients in Lake Michigan and Lake Superior	3815
Lake Kinneret: The nutrient chemistry of the sediments	3816
Changes in the chemical composition of sediments of Lake Washington, 1958-1970	3817
Nutrients in Lake Ontario	3818
Plankton population structure in the Lower Coeur d'Alene River, delta and lake	3884
Plankton productivity studies in Lake St. Clair	3895
Circulation patterns and a predictive model for pollutant distribution in Lake Erie	3897
Chemical limnology of a developing reservoir (Lake Meredith) in the Texas Panhandle	3933
Comparison of mercury levels in an oligotrophic and a eutrophic lake	393
Recording densitometry of X-radiographs for the study of cryptic laminations in the sediment of Lake Washington	393
Benthic fauna and sediments in the newly created Lake Kariba (Central Africa)	399
A hypothesis to explain differences and similarities among lakes in the Experimental Lakes Area, Northwestern Ontario	350
Chemistry of surface sediments of sixteen lakes in the Experiment- al Lakes Area, Northwestern Ontario	351
Bottom sediments of the lakes of various trophic type	352
A review of studies on the bottom sediments of lakes	353
Chemical equilibria of iodine in Great Lakes waters	353

LAKES (Continued)

	Zoobenthos of fifteen lakes in the Experimental Lakes Area, · Northwestern Ontario	3567
	Preliminary chemical characterization of waters in the Experimental Lakes Area, Northwestern Ontario	3634
	Chemical factors involved in the control of phytoplankton production in the Experimental Lakes Area, Northwestern Ontario	3665
	Trophic state of lakes in north central Florida	3743
	Limnological investigations of Texas impoundments for water quality management purposes limnological and water quality data for the Highland Lakes, 1968	3752
	A quantitative method for the determination of chlorin pigments in Great Lakes sediment	3772
	A model of the hydrology of the lakes of the Lower Grand Coulee, Washington	3896
	Pollution potential of some New Hampshire lakes	4074
	The chemical investigation of recent lake sediments from Wisconsin lakes and their interpretation	4109
	Migration of major constituents from lake sediments into lake water and its bearing on lake water composition	4111
	Acid mine pollution effects on lake biology	4114
	The effects of artificial aeration on lake ecology	4217
	Physical and chemical limnology of the lakes of Manitoulin Island	4104
	Biogeochemistry of lakes: major substances	4110
	The role of carbon in hard water marl lakes	4140
	Phytoplankton photosynthesis, micronutrient interactions, and inorganic carbon availability in a soft water Vermont lake	4175
	A diffusion model for Green Bay, Lake Michigan	4211
	Algal populations in Moses Lake, Washington. Temporal and spatial distribution and relationship with environmental parameters	4178
LIMNO	OLOGY see also FRESHWATER	
	Limmological investigations of Texas impoundments for water quality management purposeslimnological and water quality data for the Highland Lakes, 1968	3752
	Some observations on the limnology of a pond receiving animal wastes	3669
	Chemical limnology of a developing reservoir (Lake Meredith) in the Texas Panhandle	3931
	Physical and chemical limnology of lakes of Manitoulin Island	4104

MANGANESE

	The distribution of cobalt, chromium, copper, iron, manganese, nickel, and zinc in Framvaren, a Norwegian anoxic fjord	3527
	Colorimetric determination of manganese in anoxic waters	3636
	Stream faunal recovery after manganese strip mine reclamation	3856
MARL		
	The role of carbon in hard water marl lakes	4140
MARSI	Н	
	Effect of marshes on water quality	3804
MATHI	EMATICS see also MODELS	
	Time varying mathematical model for water quality	3566
	Identification of mathematical models for DO and BOD concentrations in polluted streams from noise corrupted measurements	3708
	Convolution approach to the solution for the dissolved oxygen balance equation in a stream	3516
MEAS	UREMENT see also ANALYSIS, ASSESSMENT, DETERMINATIONS, METHODS, TESTS	
	Laboratory tests for plant operation control and stream quality quality measurement	3635
	Average dissolved oxygenmeasurement and water quality signifi-cance	3647
	Sampling and measurement in the aquatic environment	3674
	Measurement of pollutant toxicity to fish III. Sublethal effects and safe concentrations	3688
	Colorimetric determination of manganese in anoxic waters	3636
	Recording densitometry of X-radiographs for the study of cryptic laminations in the sediment of Lake Washington	3933
	An automated system for multiple recording of diurnal pH	4069
	Reaeration measurements in an estuary	3610
	Identification of mathematical models for DO and BOD concentrations in polluted streams from noise corrupted measurements	3708
	Optimization of dissolved oxygen measurements	3771
	Method for measuring mineralization in lake sediments	3523
	A pH-carbon dioxide method for measuring aquatic primary productivity	3782
MERC		
	Comparison of mercury levels in an oligotrophic and a eutrophic lake	3932
META	NBOLISM	
	The influence of suspended microscopic substances on the metabolic activities of microorganisms responsible for biological enrichment of water	3577

METAE	BOLISM (Continued)	
	A review of literature on inorganic nitrogen metabolism in microorganisms	3809
METAL	LS see also TRACE ELEMENTS	
	Distribution of selected metals in bottom sediments, water, clams, tubificid annelids, and fishes of the middle Illinois River	3643
	METHODS see also ANALYSIS, ASSESSMENT, DETERMINATIONS, ESTIMATIONS, MEASUREMENT, TESTS	
	Method for measuring mineralization in lake sediments	3523
	A conductimetric method for the determination of total inorganic and particulate organic carbon fractions in freshwater	3638
	A quantitative method for the determination of chlorin pigments in Great Lakes sediment	3772
	A pH-carbon dioxide method for measuring aquatic primary productivity	3782
	An automated system for multiple recording of diurnal pH	4069
	Colorimetric determination of manganese in anoxic waters	3636
	Recording densitometry of X-radiographs for the study of cryptic laminations in the sediment of Lake Washington	3933
MICHI	IGAN	
	Dispersal of Fox River water in Green Bay, Lake Michigan	3633
	Eutrophication, silica depletion, and predicted changes in algal quality in Lake Michigan	3646
	Survey of phytoplankton productivity and nutrients in Lake Michigan and Lake Superior	3815
MICRO	DBIOLOGY	
	Development of physicochemical and microbiological characteristics preceding summer stagnation in a reservoir	3541
	Water pollution microbiology	4170
MICRO	DFLORA	
	Particulate fractions in water and the relationship to aquatic microflora	3548
MICRO	DORGANISMS	
	Chlorinated hydrocarbon, microparticulate effects on micro- organisms isolated from Lake Erie	3576
	The influence of suspended microscopic substances on the meta- bolic activities of microorganisms responsible for biological enrichment of water	3577
	A review of literature on inorganic nitrogen metabolism in micro-	3809

MICRO-HABITAT		
Micro-habitat pH differences from those of the surrounding water	3859	
MINE		
Stream faunal recovery after manganese strip mine reclamation	3856	
Acid mine pollution effects on lake biology MINERALIZATION	4114	
Method for measuring mineralization in lake sediments MODELS see also MATHEMATICS	3523	
Time varying mathematical model for water quality	3566	
A model of the hydrology of the lakes of the Lower Grand Coulee, Washington	3896	
Circulation patterns and a predictive model for pollutant distribution in Lake Erie	3897	
Identification of mathematical models for DO and BOD concentrations in polluted streams from noise corrupted measurements	3708	
Diffusion model for Green Bay, Lake Michigan	4211	
Continuous system models of oxygen depletion in a eutrophic reservoir	4215	
MUD see also SEDIMENTS		
Oxidized microzone and the consumption of oxygen in the mud of oligotrophic ponds	3768	
Oxidation-reduction determinations at the mud-water interface	3936	
MYRIOPHYLLUM		
Photosynthesis and respiration in Myriophyllum spicatum L. as related to salinity	4167	
MYTILUS		
Formulation of a synthetic seawater for bioassays with <i>Mytilus</i> edulis embryos	3826	
NICARAGUA		
A highly akaline lake in Nicaragua	3767	
NICKEL		
The distribution of cobalt, chromium, copper, iron, manganese, nickel, and zinc in Framvaren,a Norwegian anoxic fjord	3527	
NITROGEN		
A review of literature on inorganic nitrogen metabolism in microorganisms	3809	
NORWAY		
The distribution of cobalt, chromium, copper, iron, manganese, nickel, and zinc in Framvaren, a Norwegian anoxic fjord	3527	

NUTRIENTS

	Algal growth and decomposition effects on water quality, Phase II. Composition, decomposition, and nutrient regeneration of algae in batch culture	3596
	Dynamics of nutrient concentrations in the Illinois River	3788
	Lake Kinneret: the nutrient chemistry of the sediments	3816
	The effects of varying concentrations of nutrients, chlorinity and dissolved oxygen on polychaetous annelids	3580
	Survey of phytoplankton productivity and nutrients in Lake Michigan and Lake Superior	3815
	Nutrients in Lake Ontario	3818
	Nutritional ecology and community structure of the phytoplankton of Green Bay	3664
	The influence of suspended microscopic substances on the metabolic activities of microorganisms responsible for biological enrichment of water	3577
	Nutrient flux in estuaries	4132
	Migration of major constituents from lake sediments into lake water and its bearing on lake water composition	4111
OCEA	NOGRAPHY see also MARINE	
	Oceanography of the nearshore coastal waters of the Pacific Northwest relating to possible pollution. Volume II	3776
OKLAI	HOMA	
	Species diversity of net zooplankton and physicochemical con- ditions in Keystone Reservoir, Oklahoma	4162
OLIG	OTROPHIC	
	Oxidized microzone and the consumption of oxygen in the mud of oligotrophic ponds	3768
	Comparison of mercury levels in an oligotrophic and a eutrophic lake	3932
ONTAI	RIO see also CANADA	
	A hypothesis to explain differences and similarities among lakes in the Experimental Lakes Area, Northwestern Ontario	350 5
	Chemistry of surface sediments of sixteen lakes in the Experimental Lakes Area, Northwestern Ontario	3517
	Distribution and abundance of planktonic crustacea in ponds near Georgian Bay (Ontario, Canada) in relation to hydrography and water chemistry	3563
	Zoobenthos of fifteen lakes in the Experimental Lakes Area, Northwestern Ontario	3567
	Preliminary chemical characterization of waters in the Experi- mental Lakes Area, Northwestern Ontario	3634

ONTARIO (Continued) 3665 Chemical factors involved in the control of phytoplankton production in the Experimental Lakes Area, Northwestern Ontario Distribution of trace elements and chlorophyll α in Lake Ontario 3770 ORGANIC A conductimetric method for the determination of total inorganic 3638 and particulate organic carbon fractions in freshwater Effects of organic enrichment on benthic fauna in a tidal river 3693 Influence of organic matter on some characteristics of aquatic 3769 Influence of medim pH and carbon dioxide on assimilation of some 3810 organic acids by Scenedesmus quadricauda A case study of microorganic contaminants in river water 3591 OXIDATION Oxidation-reduction determinations at the mud-water interface 3936 OXYGEN Convolution approach to the solution for the dissolved oxygen 3516 balance equation in a stream Preliminary investigation of the low dissolved oxygen concentra-3518 tions that exist in Long Lake located near Spokane, Washington A rapid biochemical oxygen demand test suitable for operational 3526 control Hypolimnetic oxygen depletion mechanisms in Lake Erie 3528 3531 Toxicity and oxygen demand of decaying bark An estimation of the minimum level of dissolved oxygen in water 3571 required for normal life of fish The effects of varying concentrations of nutrients, chlorinity, 3580 and dissolved oxygen on polychaetous annelids Analysis of variations in dissolved oxygen in an impoundment in 3641 dentral Illinois Average dissolved oxygen -- measurement and water quality signi-3647 ficance Influence of Aldrin and varied oxygen concentrations on a Lake 3680 Erie heterotrophic bacterium: growth characteristics and biosynthetic patterns Oxidized microzone and the consumption of oxygen in the mud of 3768 oligotrophic ponds 3771 Optimization of dissolved oxygen measurements Shrimps in relation to oxygen depletion and its ecological sig-3835 nificance in a polluted estuary Alterations in oxygen consumption by bluegills exposed to sublethal 3847

treatment with copper

OXYGEN (Continued)	
Effects of oxygen demand on surface reaeration	3934
Eutrophication and the oxygen economy of streams	3935
The relative importance of freshwater input, temperature and tidal range in determining levels of dissolved oxygen in a polluted estuary	4108
The oxygen uptake demand of resuspended bottom sediments	4112
Continuous system models of oxygen depletion in a eutrophic reservoir	4215
PAPER INDUSTRY	
Aquatic biology and the pulp and paper industry . PARAFFINS	3929
BOD and COD analyses on parraffinic hydrocarbons PARTICULATE	3536
Particulate fractions in water and the relationship to aquatic microflora	3548
A conductimetric method for the determination of total inorganic and particulate organic carbon fractions in freshwater	3638
Chlorinated hydrocarbon, microparticulate effects on micro- organisms isolated from Lake Erie	3576
рН	
Chemistry of natural watersIV. Saturation pH value	3640
A pH-carbon dioxide method for measuring aquatic primary pro- ductivity	3782
Influence of medium pH and carbon dioxide on assimilation of some organic acids by Scenedesmus quadricauda	3810
Micro-habitat pH differences from those of the surrounding water	3859
An automated system for multiple recording of diurnal pH PHOSPHATE	4069
Sorption of inorganic phosphate by lake sediments	3666
Chemical processes for phosphate removal	3720
Fractionation of inorganic phosphate in calcareous lake sediments	3733
PHOTOSYNTHESIS	
Ecological studies on economic red algae. I, Photosynthesis and respiration of <i>Chondrus crispus</i> (Stackhouse) and <i>Gigartina stellata</i> (Stackhouse) batters	4045
The influence of salinity on the rate of photosynthesis and abundance of some tropical phytoplankton	4051
Photosynthesis and respiration in Myriophyllum spicatum L. as	4167

PHOTOSYNTHESIS (Continued)	
inorganic carbon availability in a soft water Vermont lake	4175
PHYSICOCHEMICAL	
A physical-chemical study of the flushing of the Santa Barbara Basin	3764
Chemical and physical findings from pollution studies on the East Gallatin River and its tributaries	3938
Development of physico-chemical and microbiological characteristics preceding summer stagnation in a reservoir	3541
Physical and chemical limnology of the lakes of Manitoulin Island	4104
Species diversity of net zooplankton and physicochemical conditions in Keystone Reservoir, Oklahoma	4162
PHYTOPLANKTON	
Nutritional ecology and community structure of the phytoplankton of Green Bay	3664
Chemical factors involved in the control of phytoplankton pro- duction in the Experimental Lakes Area, Northwestern Ontario	3665
Survey of phytoplankton productivity and nutrients in Lake Mich- igan and Lake Superior	3815
The influence of salinity on the rate of photosynthesis and abundance of some tropical phytoplankton	4051
Phytoplankton photosynthesis, micronutrient interactions, and inorganic carbon availability in a soft water Vermont lake	4175
PIGMENTS	
The diversity of pigments in lake sediments and its ecological significance	3645
A quantitative method for the determination of chlorin pigments in Great Lakes sediment	3772
PLANKTON	
Plankton population structure in the Lower Coeur d'Alene River, delta, and lake	3884
Plankton productivity studies in Lake St. Clair	3895
Water quality and plankton ecology the Christina River, Dela- ware	4057
POLLUTION	
Selenium: The unknown pollutant	3637
Measurement of pollutant toxicity to fish III. Sublethal effects and safe concentrations	3688
Sediment: Our greatest pollutant	3812
Circulation patterns and predictive model for pollutant distribu-	3897

POLLUTION (Continued)

	A case study of microorganic contaminants in river water	3591
	The chemical states of copper in polluted fresh water and a scheme of analysis to differentiate them	3648
	Identification of mathematical models for DO and BOD concentra- tions in polluted streams from noise corrupted measurements	3708
	Shrimps in relation to oxygen depletion and its ecological significance in a polluted estuary	3835
	Interpretation of results from the studies of pollution of surface flowing waters	3525
	Poultry pollution: Problems and solutions	3617
	Proceedings of the conference in the matter of pollution of Lake Michigan and its tributary basin, March 23-25, 1971, Chicago, Illinois	3625
	Proceedings of the conference in the matter of pollution of the interstate waters of Long Island Sound and its tributaries - Connecticut-New York	3626
	Oceanography of the nearshore coastal waters of the Pacific Northwest relating to possible pollution. Volume II	3776
	Assessment of surface water quality by a single index of pollution	3777
	Chemical and physical findings from pollution studies on the East Gallatin River and its tributaries	3938
	Pollution potential of some New Hampshire lakes	4074
	Laboratory tests for plant operation control and stream quality measurement	3635
	A hydrobiological study of the polluted River Lieve (Ghent, Belgium)	4107
	The relative importance of freshwater input, temperature and tidal range in determining levels of dissolved oxygen in a polluted estuary	4108
	Acid mine pollution effects on lake biology	4114
	Water pollution microbiology	4170
	Pollution controlled changes in algal and protozoan communities	4179
	Pollution of the navigable waters of Dade County, Florida, and its tributaries, embayments and coastal waters	4226
POND	S	
	Chemical characterization of pond sediments	3639
	Some observations on the limnology of a pond receiving animal wastes	3669
	The role of inorganic ions in the eutrophication of farm ponds	3549

PONDS (Continued)	
Distribution and abundance of planktonic crustacea in ponds near Georgian Bay (Ontario, Canada) in relation to hydrography and water chemistry	3563
An ecological study of three freshwater ponds of Hyderabad, India. I. The environment	3627
Oxidized microzone and the consumption of oxygen in the mud of oligotrophic ponds	3768
POPULATIONS see also SYSTEMATICS	
Studies on freshwater bacteria: factors which influence the population and its activity	3679
Plankton population structure in the Lower Coeur d'Alene River, delta, and lake	3884
Algal populations in Moses Lake, Washington. Temporal and spatial distribution and relationship with environmental parameters	4178
PRIMARY PRODUCTIVITY	
A pH-carbon dioxide method for measuring aquatic primary pro- ductivity	3782
PRODUCTIVITY	0.665
Chemical factors involved in the control of phytoplankton pro- duction in the Experimental Lakes Area, Northwestern Ontario	3665
Survey of phytoplankton productivity and nutrients in Lake Michigan and Lake Superior	3815
Plankton productivity studies in Lake St. Clair	3895
PROTOZOA	
Pollution controlled changes in algal and protozoan communities PULP AND PAPER INDUSTRY	4179
Aquatic biology and the pulp and paper industry	3929
PURIFICATION see also RECOVERY	
Stream purification	4116
The recovery of damaged streams REAERATION	4146
Reaeration measurements in an estuary	3610
Effects of oxygen demand on surface reaeration	3934
Direct field determination of the natural reaeration coefficient by frequency response analysis	4113
RECLAMATION	
Stream faunal recovery after manganese strip mine reclamation	3856
RED ALGAE	
Ecological studies of economic red algae. I. Photosynthesis and respiration of <i>Chondrus crispus</i> (Stackhouse) and <i>Gigartina stellata</i> (Stackhouse) batters	4045

REMOVAL

10 11 1-	
Chemical processes for phosphate removal	3720
Algal removal by coagulation	3725
RESERVOIRS see also IMPOUNDMENTS, LAKES	
Pedologic features of reservoir sedimentation	3524
Development of physico-chemical and microbiological character- istics preceding summer stagnation in a reservoir	3541
Chemical limnology of a developing reservoir (Lake Meredith) in the Texas Panhandle	3931
Continuous system models of oxygen depletion in a eutrophic reservoir	4215
Species diversity of net zooplankton and physicochemical con- ditions in Keystone Reservoir, Oklahoma	4162
RESPIRATION	
Ecological studies of economic red algae. I. Photosynthesis and and respiration of <i>Chondrus crispus</i> (Stackhouse) and <i>Gigartina stellata</i> (Stackhouse) batters	4045
Photosynthesis and respiration in <i>Myriophyllum spicatum</i> L. as related to salinity	4167
REVIEWS	
A review of studies on the bottom sediments of lakes	3530
A review of literature on inorganic nitrogen metabolism in microorganisms	3809
RIVERS see also STREAMS	
A water quality study of the Poplar River, Douglas County, Wisconsin - tributary to Lake Superior	3513
A case study of microorganic contaminants in river water	3591
Dispersal of Fox River water in Green Bay, Lake Michigan	3633
Distribution of selected metals in bottom sediments, water, clams, tubificid annelids, and fishes of the middle Illinois River	3643
Current water quality conditions and investigations in the upper Potomac River tidal system	3649
Effects of oganic enrichment on benthic fauna in a tidal river	3693
Dynamics of nutrient concentrations in the Illinois River	3788
Plankton population structure in the lower Coeur d'Alene River, delta and lake	3884
Chemical and physical findings from pollution studies on the East Gallatin River and its tributaries	3938
Water quality and plankton ecology the Christina River, Delaware	4057
Interpretation of results from the studies of pollution of surface flowing waters	352

RIVERS (Continued)	
	747
	911
	107
RUNOFF	070
A comparison of the effect of surface runoff and sewage discharge 3 upon the water quality of a subtropical estuary	1979
SALINITY	051
The influence of salinity on the rate of photosynthesis and abundance of some tropical phytoplankton	051
Photosynthesis and respiration in Myriophyllum spicatum L. as related to salinity	4167
SCENEDESMUS	
Influence of medium pH and carbon dioxide on assimilation of some organic acids by Scenedesmus quadricauda	3810
SEAWATER see also MARINE, OCEANOGRAPHY	
Formulation of a synthetic seawater for bloassays with hyperbook edulis embryos	3826
Experimental decomposition of algae in seawater and early diagenesis	4064
SEASONAL	3541
Development of physico-chemical and microbiological character istics preceding summer stagnation in a reservoir	JJ41
SEDIMENTATION - SEDIMENTS see also MUD	2520
Procedures for determining the effects of dredged sediment on bio- tabenthos viability and sediment selectivity tests	3520
A quantitative method for the determination of chlorin pigment in Great Lakes sediment	3772
Sediment: Our greatest pollutant	3812
The effect of inorganic sediment on stream biota	3829
Recording densitometry of X-radiographs for the study of cryptic laminations in the sediment of Lake Washington	3933
Chemistry of sediment in water	3952
Pedologic features of reservoir sedimentation	3524
Influences of sedimentation on water quality. An inventory of research needs	3642
Chemical characterization of bottom sediments	3515
Chemistry of surface sediments of sixteen lakes in the Experimental Lakes Area, Northwestern Ontario	3517
Procedures for determining the effects of dredged sediments on biotabenthos viability and sediment selectivity tests	3520

SEDIMENTATION - SEDIMENTS (Continued)	
Method for measuring mineralization in lake sediments	3523
Bottom sediments of the lakes of various trophic type	3529
A review of studies on the bottom sediments of lakes	3530
Chemical characterization of pond sediments	3639
Distribution of selected metals in bottom sediments, water, clams, tubified annelids, and fishes of the middle Illinois River	3643
The diversity of pigments in lake sediments and its ecological significance	3645
Sorption of inorganic phosphate by lake sediments	3666
Fractionation of inorganic phosphate in calcareous lake sediments	3733
Neutron activation analysis of sediments in western Lake Erie	3779
Lake Kinneret: The nutrient chemistry of the sediments	3816
Changes in the chemical composition of sediments of Lake Washington, 1958-1970	3817
Benthic fauna and sediments in the newly created Lake Kariba (Central Africa)	3999
The chemical investigation of recent lake sediments from Wisconsin lakes and their interpretation	4109
Migration of major constituents from lake sediments into lake water and its bearing on lake water composition	4111
The oxygen uptake demand of resuspended bottom sediments	4112
SELENIUM	
Selenium: The unknown pollutant	3637
SEWAGE - SEWERAGE	
A comparison of the effect of surface runoff and sewage discharge upon the water quality of a subtropical estuary	3979
Report on the effects of the discharge of the Madison Metropolitan Sewerage District's waste water effluents on the Badfish Creek, Yahara and Rock Rivers	3911
SILICA	
Eutrophication, silica depletion, and predicted changes in algal quality in Lake Michigan	3646
SOFT WATER	
Phytoplankton photosynthesis, micronutrient interactions, and inorganic carbon availability in a soft water Vermont lake	4175
SOILS	
Influence of organic matter on some characteristics of aquatic	3769

SOR	PTION see also UPTAKE	
	Sorption of inorganic phosphate by lake sediments	3666
STA	GNATION	
	Development of physico-chemical and microbiological characteristics preceding summer stagnation in a reservoir	3541
STR	EAMS	
	Convolution approach to the solution for the dissolved oxygen balance equation in a stream	3516
	Laboratory tests for plant operation control and stream quality measurement	3635
	The effect of inorganic sediment on stream biota	3829
	Stream faunal recovery after manganese strip mine reclamation	3856
	Identification of mathematical models for DO and BOD concentra- tions in polluted streams from noise corrupted measurements	3708
	Eutrophication and the oxygen economy of streams	3935
	Interpretation of results from the studies of pollution of pollution of surface flowing waters	3525
	Stream purification	4116
	The recovery of damaged streams	4146
STI	RIP MINING	
	Stream faunal recovery after manganese strip mine reclamation	3856
SU	BLETHAL	
	Measurement of pollutant toxicity to fishIII. Sublethal effects and safe concentrations	3688
	Alterations in oxygen consumption by bluegills exposed to sub- lethal treatment with copper	3847
SU	BTROPICAL	
	A comparison of the effect of surface runoff and sewage discharge upon the water quality of a subtropical estuary	3979
TE	MPERATURE	
	The relative importance of freshwater input, temperature and tidal range in determining levels of dissolved oxygen in a polluted estuary	4108
TE	STS see also ANALYSIS, ASSESSMENT, ESTIMATIONS, DETERMINATIONS, MEASUR METHODS	REMENT,
	A rapid biochemical oxygen demand test suitable for operational control	3526
	Procedures for determining the effects of dredged sediments on biotabenthos viability and sediment selectivity tests	3520
	Laboratory tests for plant operation control and stream quality measurement	3635

TESTS (Continued)	
Colorimetric determination of manganese in anoxic waters	3636
TEXAS	
Limnological investigations of Texas impoundments for water quality management purposes limnological and water quality data for the Highland Lakes, 1958	3752
Chemical limnology of a developing reservoir (Lake Meredith) in the Texas Panhandle	3931
THERMAL see also HEATED	
Effects of thermal discharges on the chemical parameters of water quality and eutrophication	3509
TIDAL	
Current water quality conditions and investigation in the upper Potomac River tidal system	3649
Effects of organic enrichment on benthic fauna in a tidal river	3693
The relative importance of freshwater input, temperature and tidal range in determining levels of dissolved oxygen in a polluted estuary	4108
TOXICITY - TOXINS	
Toxicity and oxygen demand of decaying bark	3531
Measurement of pollutant toxicity to fish III. Sublethal effects and safe concentrations	3688
TRACE ELEMENTS see also METALS	
Distribution of trace elements and chlorophyll $lpha$ in Lake Ontario	3770
Reconnaissance of selected minor elements in surface waters of the United States, October 1970	3519
TRIBUTARIES	
Proceedings of the conference in the matter of pollution of the interstate waters of Long Island Sound and its tributaries - Connecticut - New York	3626
Chemical and physical findings from pollution studies of the East Gallatin River and its tributaries	3938
Water quality study of the Poplar River, Douglas County, Wisconsin - tributary to Lake Superior	3513
Proceedings of the conference in the matter of pollution of Lake Michigan and its tributary basin, March 23-25, 1971, Chicago, Illinois	3625
Pollution of the navigable waters of Dade County, Florida, and tributaries, embayments and coastal waters	4226
TROPHIC	
Bottom sediments on the lakes of various trophic type	3529
Trophic state of lakes in north central Florida	3743

TROPICAL	
Lake George, Uganda. Studies on a tropical ecosystem	3751
The influence of salinity on the rate of photosynthesis and phytoplankton	4051
TUBIFICIDS	
Distribution of selected metals in bottom sediments, water, clams tubificid annelids, and fishes of the middle Illinois River	, 3643
UGANDA	
Lake George, Uganda. Studies on a tropical ecosystem	3751
UPTAKE see also SORPTION	
The oxygen uptake demand of resuspended bottom sediments	4112
WASHINGTON	
Preliminary investigation of the low dissolved oxygen concentrations that exist in Long Lake located near Spokane, Washington	3518
Changes in the chemical composition of sediments of Lake Wash-ington, 1958-1970	3817
A model of the hydrology of the lakes of the Lower Grand Coulee, Washington	3896
Recording densitometry of X-radiographs for the study of cryptic laminations in the sediment of Lake Washington	3933
Changes in the chemical composition of sediments of Lake Wash-ington	3937
Algal populations in Moses Lake, Washington: temporal and spatial distribution and relationship with environmental parameters	4178
WASTES	
Hydrogeology of solid waste disposal sites in northeastern Illino	is 3798
Report on the effects of the discharge of the Madison Metropolita Sewerage District's waste water effluents on the Badfish Creek, Yahara and Rock Rivers	•
Some observations on the limnology of a pond receiving animal was	stes 366
In support of clean water disposing of effluents from film processing	3534
WASTE TREATMENT PLANT	
Laboratory tests for plant operation control and stream quality measurement	3635
WATER QUALITY	
Effects of thermal discharges on the chemical parameters of water quality and eutrophication	r 3509
Water quality study of the Poplar River, Douglas County, Wisconsin - tributary to Lake Superior	3513
Surface quality assessment of natural bodies of water	3514

WATER QUALITY (Continued)

Time varying mathematical model for water quality	3566
Algal growth and decomposition effects on water quality, Phase II. Composition, decomposition, and nutrient regeneration of algae in batch culture	3586
Dispersal of Fox River water in Green Bay, Lake Michigan	3633
Influence of sedimentation on water quality. An inventory of research needs	3642
Average dissolved oxygen measurement and water quality significance	3647
Current water quality conditions and investigation in the upper Potomac River tidal system	3649
The effect of Las Vegas wash effluent upon the water quality in Lake Mead	3657
A technical assessment of current water quality conditions and factors affecting water quality in the upper Potomac Estuary	3658
Limnological investigations of Texas impoundments for water quality management purposes limnological and water quality data for the Highland Lakes, 1968	3752
Assessment of surface water quality by a single index of pollution	3777
Water quality variations in the Broadkill Estuary	3787
Effect of marshes on water quality	3804
Water quality control through flow augmentation	3902
A comparison of the effect of surface runoff and sewage discharge upon the water quality of a subtropical estuary	3979
Water quality and plankton ecology the Christina River, Delaware	4057
Optimal estuarine water quality management	4080

WISCONSIN

Water quality study of the Poplar River, Douglas County, Wisconsin 3513 -- tributary to Lake Superior

WISCONSIN (Continued)

Report on the effects of the discharge of the Madison Metro- politan Sewerage District's waste water effluents on the Badfish Creek, Yahara and Rock Rivers	3911
The chemical investigation of recent lake sediments from Wisconsin lakes and their interpretation	4109
ZINC	
The distribution of cobalt, chromium, copper, iron, manganese, nickel, and zinc in Framvaren, a Norwegian anoxic fjord	3527
ZOOBENTHOS	
Zoobenthos of fifteen lakes in the Experimental Lakes Area, Northwestern Ontario	3567
ZOOPLANKTON	
Species diversity of net zooplankton and physicochemical con- ditions in Keystone Reservoir, Oklahoma	4162

b. Nutrient sources

0.1	m 1	-	gent		_	v	_
A	DI	۱Т		M	9	M	1

ADAT	LALIVI	
	Animal waste utilization for pollution abatement - technology and economics. Phase 1	4085
ACID		
	A modified spectrophotometric method for the determination of ammonia (and amino acids) in natural waters, with particular reference to sea water	3551
AGRI	CULTURE	
	The nutrient content of drainage water from agricultural land	3653
	Forest management and agricultural practices	3785
	Agricultural pollution of the Great Lakes basin	3786
	Phosphate equilibria on stream sediment and soil in a watershed draining an agricultural region	3821
	The disposal of agricultural waste	3907
	Effects of agricultural pollution on eutrophication	3939
	Effects of agricultural pollutants on recreational uses of surface waters	3945
	Movement of agricultural pollutants with groundwater	3964
	Principles of nutrient control for agricultural wastewaters	4088
	Fertilizer nitrogen contribution to nitrate in surace water in a corn belt watershed	3962
	The influence of cropping patterns, soil management, and fertilizer on nitrates	3780
	Effects of agricultural discharges into freshwater lakes	4135
	Nutrient losses from agricultural land	4138
ALGA	E (See also specific phyllum, class, subclass, order, family, etc.)	
	Use of tests for limiting or surplus nutrients to evaluate sources of nitrogen and phosphorus for algae and aquatic weeds	3542
	Evaluation of algal assay procedures PAAP batch test	3885
	Effects of secondary and tertiary wastewater effluents on algal growth in a lake-river system	3968
	The importance of algal cultures for the assessment of the eutrophication of the Oslofjord	4058
	Phosphorus in wastewater effluents and algal growth	4136
	Natural carbon sources, rate of replenishment, and algal growth	4198
AMIN	0	
	A modified spectrophotometric method for the determination of ammonia (and amino acids) in natural waters, with particular reference to sea water	3551

AMMONIA - AMMONIUM

A modified spectrophotometric method for the determination of ammonia (and amino acids) in natural waters, with particular reference to sea water	3551
ANALYSIS see also ASSESSMENT, DETERMINATIONS, ESTIMATIONS, MEASUREMENT METHODS, TECHNIQUES, TESTS	
Groundwater flow system analysis in lake environments, with management and planning implications	4100
ANIMAL see also CATTLE, FARM WASTES, FEED LOTS, MANURE	
Some observations on the limnology of a pond receiving animal wastes	3669
Control of nitrogen from animal wastewaters	3807
Animal waste utilization for pollution abatement - technology and economics. Phase 1	4085
ASSAY(S) - BIOASSAY	
Evaluation of algal assay procedures PAAP batch test	3885
ASSESSMENT see also DETERMINATIONS, ESTIMATIONS, MEASUREMENT	
Surface quality assessment of natural bodies of water	3514
A technical assessment of current water quality conditions and factors affecting water quality in the upper Potomac Estuary	3658
The importance of algal cultures for the assessment of the eutrophication of the Oslofjord	4058
An assessment of the relative importance of several chemical sources to the waters of a small upland catchment	4115
Detergents: Nutrient considerations and total assessment	4123
BACTERIOLOGY	
Chemical and bacteriological studies on the Speed River system	3970
BALTIC	
Phytoplankton primary production in the Baltic area	3897
BASINS	
Sorption of soluble phosphates by freshwater sediments in the Huron River basin, Michigan	3661
Agricultural pollution of the Great Lakes basin	3786
BAY(S)	
Particulate carbon-nitrogen relations in northern Chesapeake Bay	3654
Nutrients and nutrient budgets in the Bay of Quinte, Lake Ontario	3659
Comparison of phytoplankton production between natural and altered areas in West Bay, Texas	4020
Pollution of the navigable waters of Dade County, Florida, and tributaries, embayments and coastal waters	4226

B10GEOCHEM131Kf	
Biogeochemistry of lakes: major substances BIOMASS	4110
	0000
Fertility and aquatic biomass in Southeastern impoundments	3803
BLACK SEA see also OCEANOGRAPHY	
Organic carbon budget of the Black Sea	4121
BOATING - BOATS	
The control of pollution from boating activities	3716
Sewage disposal from pleasure boats	3920
CARBON	
Particulate carbon-nitrogen relations in northern Chesapeake Bay	3654
The flux of particulate carbon in an estuary	4119
Organic carbon budget of the Black Sea	4121
Natural carbon sources, rates of replenishment, and algal growth	4198
CATTLE see also ANIMAL, FARM WASTES, FEED LOTS, MANURE	
Control of water pollution from southwestern cattle feedlots	3978
Characteristics and effects of cattle feedlot runoff	4133
A farm scale dairy waste disposal system	3618
Livestock operations and field-spread manure as sources of pollutants	3969
CHEMICAL(S)	
Changes in the chemical composition of sediments of Lake Wash-ington, 1958-1970.	3817
Chemical and physical findings from pollution studies on the East Gallatin River and its tributaries	3938
Some effects of stem flow from forest canopy trees on chemical properties of soils	3949
Chemical and bacteriological studies on the Speed River system	3970
The chemical investigation of recent lake sediments from Wisconsin lakes and their interpretation	4109
An assessment of the relative importance of several chemical sources to the waters of a small upland catchment	4115
COAST(S)	
Phytoplankton primary production off the coast of Helsinki	3880
Pollution of the coastal ocean	3521
Phytoplankton primary production in some Finnish coastal areas in relation to pollution	3863
Pollution of the navigable waters of Dade County, Florida, and tributaries, embayments and coastal waters	4226

CONNECTICUT

interstate waters of Long Island Sound and its tributaries - Connecticut-New York	3626
CONTROL	
The control of pollution from boating activities	3716
ABCs of cultural eutrophication and its control, Part 1 - Cultural changes	3746
Control of nitrogen from animal wastewaters	3807
Water quality control through flow augmentation	3902
Strategies for control of man-made eutrophication	3922
Inorganic fertilizer and phosphate mining industrieswater pollution and control	3942
ABCs of cultural eutrophication and its control. Part 2 - Wastewaters	3973
Control of water pollution from Southwestern cattle feedlots	3978
Principles of nutrient control for agricultural wastewaters	4088
Fertilizer management for pollution control	4098
CREEK(S) see also STREAMS	
Report on the effects of the discharge of the Madison Metropolitan Sewerage District's waste water effluents on the Badfish Creek, Yahara and Rock Rivers	3911
CULTURE(S)	
Continuous cultures of natural populations of phytoplankton in dilute, treated sewage effluent	4021
The importance of algal cultures for the assessment of the eutrophication of the Oslofjord	4058
DECOMPOSITION - DEGRADATION	
Manure transformations and fate of decomposition products in water	3967
Microbial degradation of detergent phosphates	3822
DENITRIFICATION	
Importance of denitrification and nitrate reduction in sediments to nitrogen budgets of lakes	3961
DETERGENTS	
Microbial degradation of detergent phosphates	3822
Phosphates in surface waters and detergents	3555
Detergents: Nutrient considerations and total assessment	4123
Eutrophication of lake water microcosms: phosphate versus nonphosphate detergents	3808

DETERMINATIONS see also ANALYSIS, ASSESSMENT, ESTIMATIONS, MEASUREMENT, METHODS, TESTS	
A modified spectrophotometric method for the determination of ammonia (and amino acids) in natural waters, with particular reference to sea water	3551
Use of the nitrate-specific ion electrode for the determination of nitrate nitrogen in surface and ground water	3974
DISPOSAL	
A farm scale dairy waste disposal system	3618
Hydrogeology of solid waste disposal sites in northeastern Illinois	3798
The disposal of agricultural waste	3907
Physical considerations for the location of septic disposal systems	3909
Sewage disposal from pleasure boats	3920
DRAINAGE	
The nutrient content of drainage water from agricultural land	3653
Phosphate equilibria on stream sediment and soil in a watershed draining an agricultural region	3821
ECONOMIC(S)	
Animal waste utilization for pollution abatement - technology and economics. Phase 1	4085
EFFLUENTS	
The effect of Las Vegas wash effluent upon the water quality in Lake Mead	3657
Continuous cultures of natural populations of phytoplankton in dilute, treated sewage effluent	4021
Report on the effects of the discharge of the Madison Metropolitan Sewerage District's waste water effluents on the Badfish Creek, Yahara and Rock Rivers	3911
Effects of secondary and tertiary wastewater effluents on algal growth in a lake-river system	3968
Phosphorus in wastewater effluents and algal growth EQUILIBRIUM	4136
Phosphate equilibria on stream sediment and soil in a watershed draining an agricultural region	3821
EROSION	
Soil erosion as a pollution agent	3554
ESTIMATIONS see also ASSESSMENT, DETERMINATIONS, MEASUREMENTS, METHODS,	TESTS
Estimating eutrophic potential of pollutants	4194

ESTUARINE - ESTUARY

	Nutrient management in the Potomac Estuary	3545
	A technical assessment of current water quality conditions and factors affecting water quality in the upper Potomac Estuary	3658
	Maintenance of a functional environment in the lower portion of the Hudson River Estuary. An appraisal of the estuary	3750
	Water quality variations in the Broadkill Estuary	3787
	A water resource-water supply study of the Potomac Estuary	3799
	A comparison of the effect of surface runoff and sewage discharge upon the water quality of a subtropical estuary	3979
	Phytoplankton kinetics in a subtropical estuary: Eutrophication	4019
	The flux of particulate carbon in an estuary	4119
	Nutrient management in the Potomac Estuary	4229
EUTRO	DPHICATION CONTRACTOR OF THE PROPERTY OF THE P	
	Role of phosphorus in eutrophication	3553
	Eutrophication of small reservoirs in the Great Plains	3745
	ABCs of cultural eutrophication and its control. Part 1 - Cultural changes	3746
	Eutrophication of lake water microcosms: Phosphate versus non-phosphate detergents	3808
	Strategies for control of man-made eutrophication	3922
	Effects of agricultural pollution on eutrophication	3939
	ABCs of cultural eutrophication and its control, Part 2 - Wastewaters	3973
	Phytoplankton kinetics in a subtropical estuary: Eutrophication	4019
	The importance of algal cultures for the assessment of the eutrophication of the Oslofjord	4058
	Estimating eutrophic potential of pollutants	4194
	Nutrients and eutrophication: The limiting nutrient controversy	4117
	Eutrophication of surface waters - Lake Tahoe pilot pond and field studies	4130
FARM	WASTES see also ANIMALS, CATTLE, FEED LOTS, MANURE	
	Water quality in relation to farm use of fertilizer	3552
	A farm scale dairy waste disposal system	3618
FEED	LOTS see also ANIMALS, CATTLE, FARM WASTES, MANURE	
	Control of water pollution from Southwestern cattle feedlots	3978
	Characteristics and effects of cattle feedlot runoff	4133

FERTILITY - FERTILIZATION see also AGRICULTURE	
Fertility and aquatic biomass in Southeastern impoundments	3803
Fertilizer use and water quality	353
Fertilizer nitrogen applications to wheat in relation to pollution	3538
Water quality in relation to farm use of fertilizer	355
The influence of cropping patterns, soil management, and fertilizer on nitrates	3780
Inorganic fertilizer and phosphate mining industries - water pollution and control	3942
Behavior of soil and fertilizer phosphorus in relation to water pollution	394
Fertilizer nitrogen contribution to nitrate in surface water in a corn belt watershed	396
Fertilizer management for pollution control	409
Development of a mathematical model to predict the role of surface runoff and groundwater flow in overfertilization of surface waters	407
Controversy is growing over fertilizer runoff	422
FINLAND	
Phytoplankton primary productivity in some Finnish coastal areas in relation to pollution	386
FISH	
Pollution potential of salmonid fish hatcheries	366
FJORD	
The importance of algal cultures for the assessment of the eutrophication of the Oslofjord	405
FLORIDA	
Trophic state of lakes in north central Florida	374
Pollution of the navigable waters of Dade County, Florida, and tributaries, embayments and coastal waters	422
FORESTS	
Forest management and agricultural practices	378.
Some effects of stem flow from forest canopy trees on chemical properties of soils	394
FRESHWATER see also LIMNOLOGY	
Microbiological aspects of the pollution of fresh water with inorganic nutrients	396
Sorption of soluble phosphates by freshwater sediments in the Huron River basin, Michigan	366
Effects of agricultural discharges into freshwater lakes	413.

GROUNDWATER

	Use of the nitrate-specific ion electrode for the determination of nitrate nitrogen in surface and ground water	3974
	Movement of agricultural pollutants with groundwater	3964
	Development of a mathematical model to predict the role of surface runoff and groundwater flow in overfertilization of surface waters	4077
	Groundwater flow system analysis in lake environments, with management and planning implications	4100
	Nitrogen load of soil in ground water from dairy manure	4118
GROW'	тн	
	The local influence of continuous waste water from a point source; direct information of the growth limiting effect of phosphorus in the Lake of Lucerne	3791
	A model of nutrient-limited phytoplankton growth	3947
	Effects of secondary and tertiary wastewater effluents on algal growth in a lake-river system	3968
	Phosphorus in wastewater effluents and algal growth	4136
	Natural carbon sources, rate of replenishment, and algal growth	4198
HELS:	INKI see also FINLAND	
HYDR	Phytoplankton primary production off the coast of Helsinki OGEOLOGY	3880
ILLI	Hydrogeology of solid waste disposal sites in northeastern Illinois	3798
	Existing levels of nitrates in waters the Illinois situation	3795
	Hydrogeology of solid waste disposal sites in northeastern Illinois	3798
IMPO	UNDMENTS see also LAKES, RESERVOIRS	
	Fertility and aquatic biomass in Southeastern impoundments	3803
INDU	STRIES	
	Inorganic fertilizer and phosphate mining industries - water pollution and control	3942
INOR	GANIC	
	Inorganic fertilizer and phosphate mining industries - water pollution and control	3942
	Microbiological aspects of the pollution of fresh water with inorganic nutrients	3960
INTE	RSTATE	
	Proceedings of the conference in the matter of pollution of the interstate waters of Long Island Sound and its tributaries - Connecticut-New York	3626

KINETICS

	Phytoplankton kinetics in a subtropical estuary: Eutrophication	4019
LAKES		
	Water quality study of the Poplar River, Douglas County, Wisconsin - tributary to Lake Superior	3513
	The effect of Las Vegas wash effluent upon the water quality in Lake Mead	3657
	Nutrients and nutrient budgets in the Bay of Quinte, Lake Ontario	3659
	The primary productivity and limiting nutrients of Little Brooklyn Lake	3670
	Onondaga Lake study	3754
	The local influence of continuous waste water from a point source; direct information of the growth limiting effect of phosphorus in the Lake of Lucerne	3791
	Nutrient sources for Lake Wingra, Madison, Wisconsin	3805
	Eutrophication of lake water microcosms: Phosphate versus non-phosphate detergents	3808
	Changes in the chemical composition of sediments of Lake Washington, 1958-1970.	3817
	Effects of secondary and tertiary wastewater effluents on algal growth in a lake-river system	3968
	Groundwater flow system analysis in lake environments, with management and planning implications	4100
	Trophic state of lakes in north central Florida	3743
	Agricultural pollution of the Great Lakes Basin	3786
	On the question of introduction of purified waste water into lakes	3790
	Plant available phosphorus status of lakes	3940
	Importance of denitrification and nitrate reduction in sediments to nitrogen budgets of lakes	3961
	Minnesota's lake shore, resources, development, policy needs. Part 1	3736
	The chemical investigation of recent lake sediments from Wisconsin lakes and their interpretation	4109
	Biogeochemistry of lakes: major substances	4110
	Effects of agricultural discharges into freshwater lakes	4135
	Eutrophication of surface waters Lake Tahoe pilot pond and field studies	4130
	Nutrients and phytoplankton in Lake Washington	4181
LEACH	HING	
	Water relations, salt balance, and nitrate leaching losses of a 960-acre citrus watershed	3943

LIMITING

	12110	
	A model of nutrient-limited phytoplankton growth	3947
	Use of tests for limiting or surplus nutrients to evaluate sources of nitrogen and phosphorus for algae and aquatic weeds	3542
	The primary productivity and limiting nutrients of Little Brook-lyn Lake	3670
	The local influence of continuous waste water from a point source; direct information of the growth limiting effect of phosphorus in the Lake of Lucerne	3791
	Nutrients and eutrophication: The limiting nutrient controversy	4117
IMN	OLOGY see also FRESHWATER	
	A study of the limnetic zooplankton of five flood control reservoirs	3833
	Some observations of the limnology of a pond receiving animal waster	3669
LIVE	STOCK see CATTLE	
ANA	GEMENT	
	Nutrient management in the Potomac Estuary	3545
	The influence of cropping patterns, soil management, and ferti- lizer on nitrates	3780
	Forest management and agricultural practices	3785
	Fertilizer management for pollution control	4098
	Groundwater flow system analysis in lake environments, with management and planning implications	4100
	Managing our environment	3741
	Effects of land management on quantity and quality of available water	4120
	Nutrient management in the Potomac Estuary	4229
MANU	JRE. see also CATTLE, FARM WASTES, FEED LOTS	
	Manure transformations and fate of decomposition products in water	3967
	Livestock operations and field-spread manure as sources of pollutants	3969
	Nitrogen load of soil in ground water from dairy manure	4118
MARI	INE see also OCEANOGRAPHY	
	Pollution of the coastal ocean	3521
MARS	SHES	
	Effect of marshes on water quality	3804
MATH	HEMATICS see also MODELS	
	Development of a mathematical model to predict the role of surface runoff and groundwater flow in overfertilization of surface water	4077

MEASUREMENT see also ANALYSIS, ASSESSMENT, ASSAY, DETERMINATIONS, TESTS	
Use of the nitrate-specific ion electrode for the determination of nitrate nitrogen in surface and ground water	3974
METALS see also TRACE ELEMENTS	
Recovery of phosphates and metals from waste phosphate sludge by reduction-sinter processes	4139
METHODS see also ANALYSIS, ASSAY, ASSESSMENT, DETERMINATIONS, TESTS	
A modified spectrophotometric method for the determination of ammonia (and amino acids) in natural waters, with particular reference to sea water	3551
MICHIGAN	
Sorption of soluble phosphates by freshwater sediments in the Huron River Basin, Michigan	3661
MICROBES	
Microbial degradation of detergent phosphates	3822
MICROBIOLOGY	
Microbiological aspects of the pollution of fresh water with inorganic nutrients	3960
MINNESOTA	
Minnesota's lake shore, resources, development, policy needs. Part 1	3736
MODELS see also MATHEMATICS	
A model of nutrient-limited phytoplankton growth	3947
Development of a mathematical model to predict the role of surface runoff and groundwater flow in overtilization of surface waters	4077
NITRATE	
Water relations, salt balance, and nitrate leaching losses of a 960-acre citrus watershed	3943
Importance of denitrification and nitrate reduction in sediments to nitrogen budgets of lakes	3961
Fertilizer nitrogen contribution to nitrate in surface water in a corn belt watershed	3962
Use of the nitrate-specific ion electrode for the determination of nitrate nitrogen in surface and ground water	3974
The influence of cropping patterns, soil management, and fertilizer on nitrates	3780
Existing levels of nitrates in waters the Illinois situation	3795
Rural sources of nitrates in water	3797
Urban sources of nitrates	3820
NITROGEN	
Fertilizer nitrogen applications to wheat in relation to pollution	3538

NITROGEN (Continued)

Use of tests for limiting or surplus nutrients to evaluate sources of nitrogen and phosphorus for algae and aquatic weeds	3542
Particulate carbon nitrogen relations in northern Chesapeake Bay	3654
Control of nitrogen from animal wastewaters	3807
Sources of nitrogen in water supplies	3950
Forms of organic nitrogen in domestic wastewater	3951
Importance of denitrification and nitrate reduction in sediments to nitrogen budgets of lakes	3961
Fertilizer nitrogen contribution to nitrate in surface water in a corn belt watershed	3962
Use of the nitrate-specific ion electrode for the determination of nitrate nitrogen in surface and ground water	3974
Nitrogen load of soil in ground water from dairy manure	4118
Nutrient management in the Potomac Estuary	3545
Nutrient balances in rivers	3547
The nutrient content of drainage water from agricultural land	3653
Nutrients and nutrient budgets in the Bay of Qinte, Lake Ontario	3659
Nutrient sources from Lake Wingra, Madison, Wisconsin	3805
The logic of nutrient removal	3912
A model of nutrient-limited phytoplankton growth	3947
Land use-nutrient level relationships on two southern Ontario watersheds	3976
Principles of nutrient control for agricultural wastewaters	4088
Use of tests for limiting or surplus nutrients to evaluate sources of nitrogen and phosphorus for algae and aquatic weeds	3542
The primary productivity and limiting nutrients of Little Brook- lyn Lake	367'0
Microbiological aspects of the pollution of fresh water with inorganic nutrients	3960
Detergents: nutrient considerations and total assessment	4123
Nutrient losses from agricultural land	4138
Nutrient management in the Potomac Estuary	4229
Nutrients and eutrophication: the limiting nutrient controversy	4117
Nutrients and phytoplankton in Lake Washington	4181
OCEAN see MARINE	
ONTARIO see also CANADA	
Nutrients and nutrient budgets in the Bay of Quinte, Lake Ontario	3659

ONTARIO (Continued)	
Land use - nutrient level relationships on two southern Ontario watersheds	397
ORGANIC	
Forms of organic nitrogen in domestic wastewater	395
Organic carbon budget of the Black Sea PARTICULATE	412
Particulate carbon nitrogen relations in northern Chesapeake Bay	365
The flux of particulate carbon in an estuary PHOSPHATE	411
Federal Trade Commission phosphate hearing heats up	354
Eutrophication of lake water microcosms: phosphate versus non- phosphate detergents	380
Phosphate equilibria on stream sediment and soil in a watershed draining an agricultural region	382
Ecology and environmental sanitation the phosphate controversy	392
Inorganic fertilizer and phosphate mining industries - water pollution and control	394
Phosphates in surface waters and detergents	355
Sorption of soluble phosphates by freshwater sediments in the Huron River basin, Michigan	366
Microbial degradation of detergent phosphates	382
Recovery of phosphates and metals from waste phosphate sludge by reduction-sinter processes	413
PHOSPHORUS	
Use of tests for limiting or surplus nutrients to evaluate sources of nitrogen and phosphorus for algae and aquatic weeds	354
Role of phosphorus in eutrophication	355
Phosphorus as a pollutant in surface waters	367
The local influence of continuous waste water from a point source; direct information of the growth limiting effect of phosphorus in the Lake of Lucerne	379
Plant available phosphorus status of lakes	394
Behavior of soil and fertilizer phosphorus in relation to water pollution	394
Leaves as a source of phosphorus	394
Significance of phosphorus in water supplies	397
Phosphorus in wastewater effluents and algal growth PHYSICAL PROPERTIES	413
Chemical and physical findings from pollution studies on the East	393

PHYTOPLANKTON

	Phytoplankton primary production in some Finnish coastal areas in relation to pollution	3863
	Phytoplankton primary production in the Baltic area	3879
	Phytoplankton primary production off the coast of Helsinki	3880
	A model of nutrient limited phytoplankton growth	3947
	Phytoplankton kinetics in a subtropical estuary: Eutrophication	4019
	Comparison of phytoplankton production between natural and altered areas in West Bay, Texas	4020
	Continuous cultures of natural populations of phytoplankton in dilute, treated sewage effluent	4021
	Nutrients and phytoplankton in Lake Washington	4181
PLAN	TS see also MACROPHYTES, VEGETATION, WEEDS (see also specific phyllu class, order, family, et	m;)
	Plant available phosphorus status of lakes	3940
POLL	UTION	
	Phosphorus as a pollutant in surface waters	3672
	Sediment: Our greatest pollutant	3812
	Estimating eutrophic potential of pollutants	4194
	Pollution of the navigable waters of Dade County, Florida, and tributaries, embayments and coastal waters	4226
	Effects of agricultural pollutants on recreational uses of surface waters	3945
	Movement of agricultural pollutants with groundwater	3964
	Livestock operations and field-spread manure as source of pollutants	3969
	Pollution of the coastal ocean	3521
	Fertilizer nitrogen applications to wheat in relation to pollution	3538
	Soil erosion as a pollution agent	3554
	Proceedings of the conference in the matter of pollution of the interstate waters of Long Island Sound and its tributaries - Connecticut-New York	3626
	Pollution potential of salmonid fish hatcheries	3660
	The control of pollution from boating activities	3716
	Agricultural pollution of the Great Lakes basin	3786
	Phytoplankton primary production in some Finnish coastal areas in relation to pollution	3863
	Chemical and physical findings from pollution studies on the East Gallatin River and its tributaries	3938
	Effects of agricultural pollution on eutrophication	3939
	Inorganic fertilizer and phosphate mining industries - water pol- lution and control	394

POLLUTION (Continued)	
Behavior of soil and fertilizer phosphorus in relation to water pollution	3944
Microbiological aspects of the pollution of fresh water with inorganic nutrients	3960
Control of water pollution from Southwestern cattle feedlots	3978
Animal waste utilization for pollution abatement - technology and economics, Phase 1	4085
Fertilizer management for pollution control	4098
PONDS	
Some observations on the limnology of a pond receiving animal waste	s 3669
Eutrophication of surface waters - Lake Tahoe pilot pond and field studies	4130
POPULATIONS see also SYSTEMATICS	
Continuous cultures of natural populations of phytoplankton in dilute, treated sewage effluent	4021
PRIMARY PRODUCTIVITY	
The primary productivity and limiting nutrients of Little Brook-lyn Lake	3670
Phytoplankton primary production in some Finnish coastal areas in relation to pollution	3863
Phytoplankton primary production in the Baltic area	3879
Phytoplankton primary production off the coast of Helsinki	3880
PROCEDURES see also ANALYSIS, ASSESSMENT, DETERMINATIONS, MEASUREMENTS,	TESTS
Evaluation of algal assay procedures PAAP batch test PRODUCTIVITY	3885
Comparison of phytoplankton production between natural and altered areas in West Bay, Texas	4020
RECREATION	
Effects of agricultural pollutants on recreational uses of surface waters	3945
RECOVERY see also PURIFICATION	
Recovery of phosphates and metals from waste phosphate sludge by reduction-sinter processes	4139
RESERVOIRS see also IMPOUNDMENTS, LAKES	
Eutrophication of small reservoirs in the Great Plains	3745
A study of the limnetic zooplankton of five flood control reservoirs	3833
RESOURCES	
A water resource-water supply study of the Potomac estuary	3799
Minnesota's lakeshore, resources, development, policy needs. Part 1	3736

RIVERS see also STREAMS Water quality study of the Poplar River, Douglas County, Wiscon-3513 sin - tributary to Lake Superior 3649 Current water quality conditions and investigation in the upper Potomac River tidal system Sorption of soluble phosphates by freshwater sediments in the 3661 Huron River basin, Michigan Maintenance of a functional environment in the lower portion of 3750 the Huron River Estuary; an appraisal of the estuary Chemical and physical findings from pollution studies on the East 3938 Gallatin River and its tributaries Effects of secondary and tertiary wastewater effluents on algal 3968 growth in a lake-river system 3970 Chemical and bacteriological studies on the Speed River system 3547 Nutrient balances in rivers Report on the effects of the discharge of the Madison Metropolitan 3911 Sewerage District's waste water effluents on the Badfish Creek, Yahara and Rock Rivers **RUNOFF** 3652 Urban runoff characteristics A comparison of the effect of surface runoff and sewage discharge 3979 upon the water quality of a subtropical estuary Development of a mathematical model to predict the role of surface 4077 runoff and groundwater flow in overfertilization of surface waters Characteristics and effects of cattle feedlot runoff 4133 4225 Controversy is growing over fertilizer runoff SALINITY Water relations, salt balance, and nitrate leaching losses of a 3943 960-acre citrus watershed SEAWATER see also MARINE, OCEANOGRAPHY A modified spectrophotometric method for the determination of 3551 ammonia (and amino acids) in natural waters, with particular reference to sea water SECONDARY Effects of secondary and tertiary wastewater effluents on algal 3968 growth in a lake-river system SEDIMENTS - SEDIMENTATION see also MUD 3812 Sediment: our greatest pollutant Phosphate equilibria on stream sediment and soil in a watershed 3821 draining an agricultural region Sorption of soluble phosphates by freshwater sediments in the 3661 Huron River basin, Michigan

SEDIMENTS - SEDIMENTATION (Continued)	
Changes in the chemical composition of sediments of Lake Wash-ington, 1958-1970	3817
Importance of denitrification and nitrate reduction in sediments to nitrogen budgets of lakes	3961
The chemical investigation of recent lake sediments from Wisconsin lakes and their interpreatation	4109
SEPTIC	
Physical considerations for the location of septic disposal systems	3909
SLUDGE	
Recovery of phosphates and metals from waste phosphate sludge by reduction-sinter processes	4139
SEWAGE - SEWERAGE	
Sewage disposal from pleasure boats	3920
A comparison of the effect of surface runoff and sewage discharge upon the water quality of a subtropical estuary	3979
Continuous cultures of natural populations of phytoplankton in dilute, treated sewage effluent	4021
Characteristics of separated storm and combined swer flows	3904
Quantity and quality relationships for combined sewer overflows	3948
Report on the effects of the discharge of the Madison Metropolitan Sewerage District's waste water effluents on the Badfish Creek, Yahara and Rock Rivers	3911
Characteristics of separated storm and combined sewer flows	3904
SHORES see also COASTS	
Minnesota's lake shore, resources, development, policy needs. Part 1	L 3736
SOILS	
Soil erosion as a pollution agent	3554
The influence of cropping patterns, soil management, and fertilizer on nitrates	3780
Phosphate equilibria on stream sediment and soil in a watershed draining an agricultural region	3821
Behavior of soil and fertilizer phosphorus in relation to water pollution	3944
Some effects of stem flow from forest canopy trees on chemical properties of soils	3949
Nitrogen load of soil in ground water from dairy manure	4118
SORPTION see also UPTAKE	
Sorption of soluble phosphates by freshwater sediments in the Huron River basin, Michigan	3661

SPECTROPHOTOMETRY	
A modified spectrophotometric method for the determination of ammonia (and amino acids) in natural waters, with particular reference to sea water	3551
STREAMS see also RIVERS	
Phosphate equilibria on stream sediment and soil in a watershed draining an agricultural region	3821
SUBTROPICAL	
A comparison of the effect of surface runoff and sewage discharge of a subtropical estuary	3979
TECHNIQUES see also ANALYSIS, ASSAYS, DETERMINATIONS, MEASUREMENT, METHOD	
Animal waste utilization for pollution abatement - technology and economics, Phase I	4085
TERTIARY	
Effects of secondary and tertiary wastewater effluents on algal growth in a lake-river system	3968
TESTS see also ANALYSIS, ASSAYS, DETERMINATIONS, MEASUREMENTS, METHODS	
Evaluation of algal assay procedures PAAP batch test	3885
Use of tests for limiting or surplus nutrients to evaluate sources of nitrogen and phosphorus for algae and aquatic weeds	3542
TEXAS	1000
Comparison of phytoplankton production between natural and altered areas in West Bay, Texas	4020
TIDAL	
Current water quality conditions and investigation in the upper Potomac River tidal system	3649
TREES see also FORESTS	2010
Some effects of stem flow from forest canopy trees on chemical properties of soils	3949
TRIBUTARIES	3938
Chemical and physical findings from pollution studies on the East Gallatin River and its tributaries	
Water quality study of the Poplar River, Douglas County, Wisconsin - tributary to Lake Superior	3513
Pollution of the navigable waters of Dade County, Florida, and tributaries, embayments and coastal waters	4226
TROPHIC	
Trophic state of lakes in north central Florida	3743
WASHINGTON	
Changes in the chemical composition of sediments of Lake Washing- ton, 1958-1970.	3817

WASTES

	A farm scale dairy waste disposal system	3618
	On the question of introduction of purified waste water into lakes	3790
	The local influence of continuous waste water from a point source; direct information of the growth limiting effect of phosphorus in the Lake of Lucerne	3791
	$\label{thm:conditional} \mbox{Hydrogeology of solid waste disposal sites in northeastern Illinois}$	3798
	The disposal of agricultural waste	3907
	Animal waste utilization for pollution abatement - technology and economics. Phase I	4085
	Some observations on the limnology of a pond receiving animal wastes	366
	Recovery of phosphates and metals from waste phosphate sludge by reduction-sinter processes	4139
WASTI	EWATER	
	Forms of organic nitrogen in domestic wastewater	3951
	Effects of secondary and tertiary wastewater effluents on algal growth in a lake-river system	3968
	Control of nitrogen from animal wastewaters	3807
	ABCs of cultural eutrophication and its control. Part 2 Wastewaters	3973
	Principles of nutrient control for agricultural wastewaters	4088
	Phosphorus in wastewater effluents and algal growth	4136
WATE	R QUALITY	
	Water quality study of the Poplar River, Douglas County, Wisconsin - tributary to Lake Superior	3513
	Surface quality assessment of natural bodies of water	3514
	Fertilizer use and water quality	3532
	Water quality in relation to farm use of fertilizer	3552
	Current water quality conditions and investigation in the upper Potomac River tidal system	3649
	The effect of Las Vegas wash effluent upon the water quality in Lake Mead	3657
	A technical assessment of current water quality conditions and factors affecting water quality in the upper Potomac Estuary	3658
	Water quality variations in the Broadkill Estuary	3787
	Effect of marshes on water quality	3804
	Water quality control through flow augmentation	3902
	A comparison of the effect of surface runoff and sewage discharge upon the water quality of a subtropical estuary	3979
	Effects of land management on quantity and quality of available water	4120

	WEEDS see also MACROPHYTES, PLANTS, VEGETATION (see also specific phyllum order, family, etc.)	, class
	Use of tests for limiting or surplus nutrients to evaluate sources of nitrogen and phosphorus for algae and aquatic weeds	3542
	WISCONSIN	
	Water quality study of the Poplar River, Douglas County, Wisconsin - tributary to Lake Superior	3513
	Nutrient sources for Lake Wingra, Madison, Wisconsin	3805
	The chemical investigation of recent lake sediments from Wis- consin lakes and their interpretation	4109
	ZOOPLANKTON	
	A study of the limnetic zooplankton of five flood control reservoirs	3833
,	Nutrient cycles	
	ACETYLENE	
	Acetylene-ethylene assay for nitrogenase activity in Keystone Reservoir, Oklahoma	3656
	The relation of acetylene reduction to heterocyst frequency in blue-green algae	3696
	Acetylene reduction (nitrogen fixation) in Wisconsin lakes	3813
	Microbiological studies on nitrogen fixation in aquatic environ- ments. V. Modification of acetylene method for the measurement of in situ rate of nitrogen fixation	3975 3975
	ACID	
	Influence of medium pH and carbon dioxide on assimilation of some organic acids by Scenedesmus quadricauda	3810
	ADENOSINE	
	Adenosine triphosphate content of Selenastrum capricornutum AEROBACTER	3546
	Factors affecting phosphate uptake by Aerobacter aerogenes in a system relating cell numbers to 32P uptake	3671
	AGRICULTURE	
	Losses of nitrogen and phosphorus from agricultural land	3539
	Phosphate equilibria on stream sediment and soil in a watershed draining an agricultural region	3821
	Effects of agricultural pollution on eutrophication	3939
	Effects of agricultural pollutants on recreational uses of surface waters	3945
	ALGAE (See also specific phyllum, class, subclass, order, family, etc.)	0.667
	Studies on the physiology of heterocyst production in the nitrogen fixing blue-green alga Anabaena sp. L-31 in continous culture	3605

С.

ALGAE (Continued)

Dark heterotrophic growth of an endophytic blue-green alga	3869
The effect of various nitrogen sources upon the production of extracellular polysaccharide by the blue-green alga Anabaena flos aquae A-37	3891
Use of tests for limiting or surplus nutrients to evaluate sources of nitrogen and phosphorus for algae and aquatic weeds	3542
Algal growth and decomposition effects on water quality, Phase II. Composition, decomposition, and nutrient regeneration of algae in batch culture	3596
The relation of acetylene reduction to heterocyst frequency in blue green algae	3696
Primary productivity, chemo-organotrophy, and nutritional inter- actions of epiphytic algae and bacteria on macrophytes in the littoral of a lake	3860
Blue-green algae and humic substances	3877
A review of the factors limiting the growth of nuisance algae	3966
Dependence of nitrite assimilation in green algae on energy supplied by respiration and photosynthesis	4032
Ecological studies of economic red algae. 1. Photosynthesis and respiration of <i>Chondrus crispus</i> (Stackhouse) and <i>Gigartina stellata</i> (Stackhouse) batters	4045
Experimental decomposition of algae in seawater and early diagenesis	4064
The relative significance of phosphorus and nitrogen as algal nutrients	3556
Bacteria, carbon dioxide, and algal blooms	3600
Eutrophication, silica depletion, and predicted changes in algal quality in Lake Michigan	3646
The effect of carbon on algal growth its relationship to eutrophication	3655
Algal growth assessment in natural waters	3706
Limnological investigations of Texas impoundments for water quality management purposes the use of algal cultures to assess the effects of nutrient enrichment on the Highland Lakes of the Colorado River, Texas	3866
Algal growth exciters	3874
Effects of secondary and tertiary wastewater effluents on algal growth in a lake-river system	3968
The importance of algal cultures for the assessment of the eutrophication of the Oslofjord	4058
Blue-green algal responses to some organic-nitrogen substrates	4070
Characteristics of nitrogenase activity in broken cell pre- parations of the blue-green alga Gloeocapsa sp. LB 795	4183

ALGAE (Continued)

	Characteristics of the nitrogenase system of the blue-green alga Anabaena cylindrica	4187
	Photorespiration and nitrogenase activity in the blue-green alga Anabaena cylindrica	4191
	Nitrogen fixation and heterocysts in the blue-green alga Anabaena cylindrica	4200
	Changes in pigment composition and photosynthesis induced by iron- deficiency in the blue-green alga Anacystis nidulans	4201
	Influence of nitrogen deficiency on uridine incorporation into ribosomes in the green alga <i>Chlorella</i>	4208
	Characterization of phosphorus-limited plankton algae	4124
	Relationship between light carbon dioxide fixation and dark carbon dioxide fixation by marine algae	4197
	Effects of low nutrient dilution water and mixing on the growth of nuisance algae	4216
	Algal populations in Moses Lake, Washington: temporal and spatial distribution and relationship with environmental parameters	4178
	Algal responses to nutrient additions in natural waters. I. Laboratory assays	4192
	Natural carbon sources, rates of replenishment, and algal growth	4198
	Algal responses to nutrient additions in natural waters. II. Field experiments	4203
ALKA	ALINE	
	Relationship between phosphates and alkaline phosphatase of Anabaena flos aquae in continuous culture	4016
AMIN	10	
	A modified spectrophotometric method for the determination of ammonia (and amino acids) in natural waters, with particular reference to sea water	3551
	The free amino acids in the sediments of Toronto Harbor	3784
	Extrusion of carbon accompanying uptake of amino acids by marine phytoplankters	4060
	Influence of medium pH and carbon dioxide on assimilation of some organic acids by Scenedesmus quadricauda	3810
AMM	ONIA	
	The excretion of ammonia and urea by Mya arenaria L. (Mollusca: Bivalvia)	3537
	A modified spectrophotometric method for the determination of ammonia (and amino acids) in natural waters, with particular reference to sea water	355
	Toxicity of ammonia to marine diatoms	3698

ŀ	AMMONIA (Continued)	
	Phytoplankton growth and composition in shipboard cultures supplied with nitrate, ammonium, or urea as the nitrogen source	4022
	The physiological state with respect to nitrogen of phytoplankton from low-nutrient subtropical water as measured by the effect of ammonium ion on dark carbon dioxide fixation	4196
	Relationships of autotrophic ammonium-oxidizing bacteria to marine salts	4153
1	Anabaena	
	Studies on the physiology of heterocyst production in the nitrogen fixing blue-green alga Anabaena sp. L-31 in continuous culture	3605
	The effect of various nitrogen sources upon the production of extracellular polysaccharide by the blue-green alga Anabaena flos aquae A-37	
	Relationship between phosphates and alkaline phosphatase of Anabaena flos aquae in continuous culture	4016
	Kinetics of synthesis of nitrogenase in batch and continuous culture of Anabaena flos aquae	4017
	Localization of nitrogen fixation in Anabaena	4065
1	ANACYSTIS	
	Changes in pigment composition and photosynthesis induced by iron deficiency in the blue-green alga Anacystis nidulans ANNELIDS	4201
1		3580
	The effects of varying concentrations of nutrients, chlorinity, and dissolved oxygen on polychaetous annelids	3380
1	ARCTIC	
1	Nutrient limiting factors in an arctic tundra pond ASSAY(S) - BIOASSAY	3954
	Acetylene-ethylene assay for nitrogenase activity in Keystone Reservoir, Oklahoma	3656
	Algal responses to nutrient additions in natural waters. I. Laboratory assays	4192
J	ASSESSMENT see also DETERMINATIONS, ESTIMATIONS, MEASUREMENT	
	A technical assessment of current water quality conditions and factors affecting water quality in the upper Potomac Estuary	3658
	Algal growth assessment in natural waters	3706
	Assessment of surface water quality by a single index of pollution	3777
	The importance of algal cultures for the assessment of the eutrophication of the Oslofjord	4058
1	AUTOTROPHIC	
	The interrelation of carbon and phosphorus in regulating hetero- trophic and autotrophic populations in aquatic ecosystems	3801
	The interrelation of carbon and phosphorus in regulating hetero- trophic and autotrophic populations in an aquatic ecosystem, Shriner Pond	4127

AUTOTROPHIC (Continued) 4153 Relationships of autotrophic ammonium oxidizing bacteria to marine salts BACTERIA 3600 Bacteria, carbon dioxide, and algal blooms Studies on freshwater bacteria: factors which influence the 3679 population and its activity 3860 Primary productivity, chemo-organotrophy, and nutritional interactions of epiphytic algae and bacteria on macrophytes in the littoral of a lake Occurrence and distribution of phosphate solubilizing bacteria 3941 and phosphatase in marine sediments at Porto Novo 3955 Microbiological studies on nitrogen fixation in aquatic environments -- II. On the distribution of nitrogen fixing bacteria in sea water regions Microbiological studies on nitrogen fixation in aquatic environ-3956 ments -- I. On the distribution of nitrogen fixing bacteria in fresh water regions Microbiological studies on nitrogen fixation in aquatic environ-3957 ments -- IV. On the nitrogen fixing bacteria in culture ponds Nitrogen fixation by bacteria in Lake Mize, Florida, and in some 3996 lacustrine sediments Enteric bacterial metabolism of stream sediment eluates 3544 Relationships of autotrophic ammonium oxidizing bacteria to 4153 to marine salts Bacterial microflora in Chlorella vulgaris culture 4166 BALTIC 3879 Phytoplankton primary production in the Baltic area BAY(S) Particulate carbon-nitrogen relations in northern Chesapeake Bay 3654 Nutrients and nutrient budgets in the Bay of Quinte, Lake Ontario 3659 Nutritional ecology and community structure of the phytoplankton 3664 of Green Bay Nitrogen cycle and primary production in mesotrophic Lake Lucerne 3668 (Horwer Bay) and in eutrophic Red Lake with special regard to nitrates as limiting factors Reduced flows and the future ecology of the San Francisco Bay-3753 Delta system A preliminary study of the effects of water circulation in the San 3763 Francisco Bay. Part A. Some effects of fresh water inflow on the flushing of south San Francisco Bay. Part B. Movement of seabed drifters in the San Francisco Bay estuary and the adjacent Pacific Ocean

BAY(S) (Continued)	
Chemical changes, including nitrate reduction, in Darwin Bay, Galapagos Archipelago, over a 2-month period, 1969	3972
BENTHIC - BENTHOS	
Species diversity of benthic macroinvertebrates in three Michigan streams	3830
BIOGEOCHEMISTRY	
Biogeochemistry of lakes: major substances	4110
BIOLOGY	
Thermal effects on biological production in nutrient rich ponds	4008
Aquatic biology and the pulp and paper industry (Report No. 2)	3929
Symposium on planktonic organisms as biological indicators of their environment (Prelimary reports)	4174
BIOMASS	
Fertility and aquatic biomass in Southeastern impoundments BLACK SEA	3803
Oceanography of the Black Sea: inorganic nitrogen compounds	3522
Organic carbon budget of the Black Sea	4121
BORON	
Growth of Chlorella in relation to boron supply	3603
BOTTOM SEDIMENTS see SEDIMENTS - SEDIMENTATION	
BRACKISH	
Aspects of phosphorus cycling in brackish waters	4129
CALCAREOUS	
Fractionation of inorganic phosphate in calcareous lake sediments CALIFORNIA	3733
A freshwater red tide on Clear Lake, California	4034
The relative importance of nannoplankton and netplankton as primary producers in the California Current system	4044
CARBON	
Particulate carbon-nitrogen relations in northern Chesapeake Bay	3654
The effect of carbon on algal growth its relationship to eutrophication	3655
A rapid method for the estimation of the carbon content of seston and periphyton	3781
The interrelation of carbon and phosphorus in regulating hetero- trophic and autotrophic populations in aquatic ecosystems	3801
The controversy bubbles on carbon versus phosphorus	3806
The daily carbon gains and losses in the seston of Queen Mary	3819

CARBON (Continued)

CARDON (Continued)	
Levels of dissolved oxygen and carbon fixation by marine microalgae	
Nitrogen and carbon distribution in sediment cores of selected Wisconsin lakes	3910
Extrusion of carbon accompanying uptake of amino acids by marine phytoplankters	4060
The flux of particulate carbon in an estuary	4119
Organic carbon budget of the Black Sea	4121
The interrelation of carbon and phosphorus in regulating hetero- trophic and autotrophic populations in an aquatic ecosystem, Shriner Pond	4127
Carbon limitation in sewage lagoons	4128
The role of carbon in hard water marl lakes	4140
Phytoplankton photosynthesis, micronutrient interactions, and inroganic carbon availability in a soft water Vermont lake	4175
The seasonal variation of dissolved organic carbon in the inshore water of the Menai Strait in relation to primary production	4195
Natural carbon sources, rates of replenishment, and algal growth	4198
CARBONATE	
Primary production and phytoplankton in the Experimental Lakes Area, Northwestern Ontario, and other low-carbonate waters, and a liquid scintillation method for determining 14C activity in photosynthesis	3604
CARBON DIOXIDE	3600
Bacteria, carbon dioxide, and algal blooms	3782
A pH-carbon dioxide method for measuring aquatic primary pro- ductivity	3810
Influence of medium pH and carbon dioxide on assimilation of some organic acids by Scenedesmus quadricauda	
The physiological state with respect to nitrogen of phytoplankton from low-nutrient subtropical water as measured by the effect of ammonium ion on dark carbon dioxide fixation	4196
Relationship between light carbon dioxide fixation and dark carbon dioxide fixation by marine algae	a 4197
CELL(S)	3671
Factors affecting phosphate uptake by Aerobacter aerogenes in a system relating cell numbers to 32P uptake	
Characteristics of nitrogenase activity in broken cell preparations of the blue-green alga <i>Gloeocapsa</i> sp. LB 795	4183
CERATOPHYLLUM	000
Evidence that nitrogen supply influences the distribution of a freshwater macrophyte, Ceratophyllum demersum	3990

CHEMICAL(S)

	Chemical characterization of bottom sediments	3515
	Development of physicochemical and microbiological characteristics preceding summer stagnation in a reservoir	3541
	Preliminary chemical characterization of waters in the Experimental Lakes Area, Northwestern Ontario	3634
	Chemical characterization of pond sediments	3639
	Chemical factors involved in the control of phytoplankton production in the Experimental Lakes Area, Northwestern Ontario	3665
	A physical-chemical study of the flushing of the Santa Barbara basin	376
	Changes in the chemical composition of sediments of Lake Washington, 1958-1970	381
	Chemical limnology of a developing reservoir (Lake Meredith) in the Texas Panhandle	3931
	Chemical and physical findings from pollution studies on the East Gallatin River and its tributaries	3938
	Chemical changes, including nitrate reduction, in Darwin Bay, Galapagos Archipelago, over a 2-month period, 1969	3972
	The dynamics of dry matter and chemical substances in a $\it Juncus$ $\it effusus$ population	3982
	The chemical investigation of recentlake sediments from Wisconsin lakes and their interpretation	4109
CHEM	ISTRY	
	Chemistry of surface sediments of sixteen lakes in the Experimental Lakes Area, Northwestern Ontario	3517
	Lake Kinneret: The nutrient chemistry of the sediments	3816
	Chemistry of sediment in water	3952
	Primary productivity, chemo-organotrophy, and nutritional interactions of epiphytic algae and bacteria on macrophytes in the littoral of a lake	3860
CHLO	RELLA	
	Growth of Chlorella in relation to boron supply	3603
	Regulation of nitrate reductase in Chlorella vulgaris	3667
	Influence of nitrogen deficiency on uridine incorporation into ribosomes in the green alga <i>Chlorella</i>	4208
CHL01	Bacterial microflora in <i>Chlorella vulgaris</i> culture RINITY - CHLORINATION	4166
	The effects of varying concentrations of nutrients, chlorinity,	3580
CHI O	and dissolved oxygen on polychaetous annelids	
OHEU	Distribution of trace elements and chlorophyll a in Lake Ontario	3770
	Distribution of trace elements and chiorophyri a in bake offcario	,,,,

CHLOROPHYLL (Continued)	
Relationships between production, nutrient accumulation, and chlorophyll synthesis in an <i>Eleocharis quadrangulata</i> population	3984
A quantitative method for the determination of chlorin in in Great Lakes sediment	3772
CHONDRUS	
Ecological studies of economic red algae. I. Photosynthesis and and respiration of <i>Chondrus crispus</i> (Stackhouse) and <i>Gigartina stellata</i> (Stackhouse) batters	4045
CIRCULATION	
A preliminary study of the effects of water circulation in the San Francisco Bay. Part A. Some effects of fresh water inflow on the flushing of south San Francisco Bay. Part B. Movement of seabed drifters in the San Francisco Bay estuary and the adjacent Pacific Ocean	3763
CLADOPHORA	
Ecology of Cladophora fracta and Cladophora glomerata	
COAST(S)	0000
Phytoplankton primary production off the coast of Helsinki	3880
Oceanography of the nearshore coastal waters of the Pacific Northwest relating to possible pollution. Volume II	3776
Phytoplankton primary production in some Finnish coastal areas in relation to pollution	3863
The distribution of urea in coastal and oceanic waters	3971
The relative importance of nannoplankton and netplankton as primary producers in tropical oceanic and neritic phytoplankton communities	4043
Nitrogen fixation in an estuarine environment: The Waccasassa on the Florida Gulf Coast	4145
COMMUNITIES see POPULATIONS	
CONTROL	
Laboratory tests for plant operation control and stream quality measurement	3635
Chemical factors involved in the control of phytoplankton production in the Experimental Lakes Area, Northwestern Ontario	on 3665
Developments in the use of herbicides for the control of aquatic macrophytes	3729
ABCs of cultural eutrophication and its control. Part I - Cultural changes	
A study of the limnetic zooplankton of five flood control reservoi	rs 3833
CRUSTACEA	
The excretion of ammonia and urea by Mya arenaria L. (Mollusca: Bivalvia)	3537

CVANOPHYTA

CYANOPHYTA	
Catalytic mobilization of phosphate in lake water by Cyanophyta	3811
CYCLE - CYLING	
Nitrogen cycle and primary production in mesotrophic Lake Lucerne (Horwer Bay) and in eutrophic Red Lake with special regard to nitrates as limiting factors	3668
The nitrogen cycle	3814
The nitrogen cycle in sediment-water systems	3959
DARK	
Dark heterotrophic growth of an andophytic blue-green alga	3869
The physiological state with respect to nitrogen of phytoplankton from low-nutrient subtropical water as measured by the effect of ammonium ion on dark carbon dioxide fixation	4196
Relationship between light carbon dioxide fixation and dark carbon dioxide fixation by marine algae	4197
DECOMPOSITION - DEGRADATION	
Algal growth and decomposition effects on water quality, Phase II. Composition, decomposition, and nutrient regeneration of algae in batch culture	3596
Manure transformations and fate of decomposition products in water	3967
Experimental decomposition of algae in seawater and early diagenesi	s 4064
Microbial degradation of detergent phosphates	3822
DELAWARE	
Water quality and plankton ecology the Christina River, Delaware DENITRIFICATION	4057
Importance of denitrification and nitrate reduction in sediments to nitrogen budgets of lakes	3961
DETERGENTS	
Microbial degradation of detergent phosphates	3822
Phosphates in surface waters and detergents DIAGENESIS	3555
Experimental decomposition of algae in seawater and early diagenesi DIATOMS	s 4064
Toxicity of ammonia to marine diatoms	3698
A hypothesis concerning silica and the freshwater planktonic diatom ${\tt DILUTION}$	is 3802
Effects of low nutrient dilution water and mixing on the growth of nuisance algae	4216
DIURNAL	

Diurnal rhythms in netplankton and nannoplankton assimilation ratios 3882

DIVERSITY (for biological see POPULATIONS) DREDGING	
Dredging: Problems and remedies DYNAMICS	3543
Dynamics of nutrient concentrations in the Illinois River	3788
An experimental approach to the production dynamics and structure of freshwater animal communities	3794
The dynamics of dry matter and chemical substances in a $\it Juncus$ $\it effusus$ population	3982
EFFLUENTS	
Continuous cultures of natural populations of phytoplankton in dilute, treated sewage effluent	4021
Effects of secondary and tertiary wastewater effluents on algal growth in a lake-river system	3968
EICHHORNIA	
Variation in the elemental content of <i>Eichhornia crassipes</i> ELEOCHARIS	3986
Relationships between production, nutrient accumulation, and chlorophyll synthesis in an <i>Eleocharis quadrangulata</i> population	3984
ELODIA	
The influences of nutrient pollution levels upon element constitution and morphology of $Elodia\ canadensis$ Rich. in Michx.	4141
ENERGETICS	
Phytoplankton energetics in a sewage treatment lagoon	3893
ENERGY	
Dependence of nitrite assimilation in green algae on energy supplied by respiration and photosynthesis	4032
ENGINEERING	
Engineering considerations of a eutrophic water body ENGLAND	3775
The daily carbon gains and losses in the seston of Queen Mary Reservoir, England, during 1968	3819
Trends in nitrate concentrations in English rivers in relation to fertilizer use	3550
EPIPHYTIC	
Primary productivity, chemo-organotrophy, and nutritional inter- actions of epiphytic algae and bacteria on macrophytes in the littoral of a lake	3860
EQUATOR	
Nitrite distribution and its regulation processes in the equatorial Pacific Ocean	3796
EQUILIBRIUM	
Phosphate equilibria on stream sediment and soil in a watershed draining an agricultural region	3821

ESCHERICHIA	
Phenotypic restoration by molybdate of nitrate reductase activity in chlD mutants of Escherichia coli	3831
ESTIMATIONS see also ASSESSMENT, DETERMINATIONS, MEASUREMENTS, METHODS,	TESTS
A rapid method for the estimation of the carbon content of seston and periphyton	3781
Estimating eutrophic potential of pollutants ESTUARINE - ESTUARY	4194
Optimal estuarine water quality management	4080
Nutrient management in the Potomac Estuary	3545
A technical assessment of current water quality conditions and factors affecting water quality in the upper Potomac Estuary	3658
Maintenance of a functional environment in the lower portion of the Hudson River Estuary. An appraisal of the estuary	3750
A preliminary study of the effects of water circulation in the San Francisco Bay, Part A. Some effects of fresh water inflow on the flushing of south San Francisco Bay. Part B. Movement of seabed drifters in the San Francisco Bay estuary and the adjacent Pacific Ocean	3763
Water quality variations in the Broadkill Estuary	3787
A water resource-water supply study of the Potomac Estuary	3799
Parameters affecting the growth of <i>Ulva latissima</i> in a polluted estuary	3857
Phytoplankton kinetics in a subtropical estuary: Eutrophication	4019
Nutrient flux in estuaries	4132
The flux of particulate carbon in an estuary	4119
Nitrogen fixation in an estuarine environment: The Waccasassa on the Florida Gulf Coast	4145
ETHYLENE	
Acetylene-ethylene assay for nitrogenase activity in Keystone Reservoir, Oklahoma	3656
EUTROPHICATION	0.000
Respiration of aquatic macrophytes in eutrophic ecosystems	3573
Nitrogen cycle and primary production in mesotrophic Lake Lucerne (Horwer Bay) and in eutrophic Red Lake with special regard to nitrates as limiting factors	3668
Engineering considerations of a eutrophic water body	377
The role of inorganic ions in the eutrophication of farm ponds	3549
Role of phosphorus in eutrophication	3553
Eutrophication, silica depletion, and predicted changes in algal quality in Lake Michigan	3646
Lake eutrophication: A laboratory investigation	3651
The effect of carbon on algal growth its relationship to	3655
entrophication	303

10	
EUTROPHICATION (Continued)	3746
ABCs of cultural eutrophication and its control. Tare I Cultural changes	
Effects of agricultural pollution on eutrophication	3939
Phytoplankton kinetics in a subtropical estuary: Eutrophication	4019
The importance of algal cultures for the assessment of the eutrophication of the Oslofjord	4058
The role of nitrogen in eutrophic processes	4125
Estimating eutrophic potential of pollutants	4194
Eutrophication and aquatic ecosystems	4102
Nutrients and eutrophication: The limiting nutrient controversy	4117
Eutrophication of surface waters Lake Tahoe pilot pond and field studies	4130
Phosphorus, silica, and eutrophication of Lake Michigan	4134
The role of phosphorus in eutrophication	4137
EXCITERS	
Algal growth exciters	3874
EXTRACELLULAR	
The effect of various nitrogen sources upon the production of extracellular polysaccharide by the blue-green alga Anabaena flos aquae A-37	3891
Liberation of extracellular products of photosynthesis by tropical phytoplankton	4054
FARM WASTES see also ANIMALS, CATTLE, FEED LOTS, MANURE	
The role of inorganic ions in the eutrophication of farm ponds	3549
Water quality in relation to farm use of fertilizer	3552
FERTILITY - FERTILIZATION see also AGRICULTURE	
Fertility and aquatic biomass in Southeastern impoundments	3803
The fertilization of Great Central Lake. I. Effect on primary production	4202
Trends in nitrate concentrations in English rivers in relation to fertilizer use	3550
Water quality in relation to farm use of fertilizer	3552
Behavior of soil and fertilizer phosphorus in relation to water	3944
Development of a mathematical model to predict the role of surface runoff and groundwater flow in overfertilization of surface wate	4077 rs
ETNI AND	
Phytoplankton primary production in some Finnish coastal areas in relation to pollution	3863

	7	-	1.1	
ы	1	•	м	

3650
8813
3864
3955
3956
3957
3975
3996
4028
4065
4196
4145
4172
4197
4200
4058
3743
3996
4145
3 3 3 3 4 4 4 4 3 3

FLUSHING A preliminary study of the effects of water circulation in the 3763 San Francisco Bay. Part A. Some effects of fresh water inflow on the flushing of south San Francisco Bay, Part B. Movement of seabed drifters in the San Francisco Bay estuary and the adjacent Pacific Ocean 3764 A physical-chemical study of the flushing of the Santa Barbara Basin FOOD see also NUTRITION 3983 Nutritive quality of food in ecological systems FRESHWATER see also LIMNOLOGY A preliminary study of the effects of water circulation in the 3763 San Francisco Bay. Part A. Some effects of fresh water inflow on the flushing of south San Francisco Bay. Part B. Movement of seabed drifters in the San Francisco Bay estuary and the adjacent Pacific Ocean Microbiological studies on nitrogen fixation in aquatic environ-3956 ments -- I. On the distribution of nitrogen fixing bacteria in fresh water regions Microbiological aspects of the pollution of fresh water with 3960 inorganic nutrients Sorption of soluble phosphates by freshwater sediments in the 3661 Huron River basin, Michigan Studies on freshwater bacteria: factors which influence the 3679 population and its activity An experimental approach to the production dynamics and structure 3794 of freshwater animal communities A hypothesis concerning silica and the freshwater planktonic diatoms 3802 Evidence that nitrogen supply influences the distribution of a 3990 freshwater macrophyte, Ceratophyllum demersum 4034 A freshwater red tide on Clear Lake, California 3875 Productivity problems of freshwaters **GALAPAGOS** Chemical changes, including nitrate reduction, in Darwin Bay, 3972 Galapagos Archipelago, over a 2-month period, 1969 GIGARTINA Ecological studies of economic red algae. I. Photosynthesis and 4045 respiration of Chondrus crispus (Stackhouse) and Gigartina stellata (Stackhouse) batters **GLOEOCAPSA** Characteristics of nitrogenase activity in broken cell preparations 4183 of the blue-green alga. Gloeocapsa sp. LB 795 GROUNDWATER Development of a mathematical model to predict the role of surface 4077 runoff and groundwater flow in overfertilization of surface waters

GROWTH

	Algal growth and decomposition effects on water quality, Phase II. Composition, decomposition, and nutrient regeneration of algae in batch culture	3596
	Growth of Chlorella in relation to boron supply	3603.
	The effect of carbon on algal growth its relationship to eutrophication	3655
	Algal growth assessment in natural waters	3706
	The local influence of continuous waste water from a point source; direct information of the growth limiting effect of phosphorus in the Lake of Lucerne	3791
	Parameters affecting the growth of <i>Ulva latissima</i> in a polluted estuary	3857
	Dark heterotrophic growth of an endophytic blue-green alga	3869
	Algal growth exciters	3874
	A model of nutrient-limited phytoplankton growth	3947
	A review of the factors limiting the growth of nuisance algae	3966
	Effects of secondary and tertiary wastewater effluents on algal growth in a lake-river system	3968
	Phytoplankton growth and composition in shipboard cultures supplied with nitrate, ammonium, or urea as the nitrogen source	4022
	Natural carbon sources, rates of replenishment, and algal growth	4198
	Effects of low nutrient dilution water and mixing on the growth of nuisance algae	4216
HARB	OR(S)	
HARD	The free amino acids in the sediments of Toronto Harbor WATER	3784
	The role of carbon in hard water marl lakes	4140
HELS	INKI	
HERB	Phytoplankton primary production off the coast of Helsinki	3880
	Developments in the use of herbicides for the control of aquatic macrophytes	3729
HETE	ROCYSTS	
	Studies on the physiology of heterocyst production in the nitrogen fixing blue-green alga Anabaena sp. L-31 in continuous culture	3605
	The relation of acetylene reduction to heterocyst frequency in blue-green algae	3696
	Nitrogen fixation and heterocysts in the blue-green alga Anabaena cylindrica	4200

HETEROTROPHIC The interrelation of carbon and phosphorus in regulating hetero-3801 trophic and autotrophic populations in aquatic ecosystems 3869 Dark heterotrophic growth of an endophytic blue-green alga The interrelation of carbon and phosphorus in regulating hetero-4127 trophic and autotrophic populations in an aquatic ecosystem, Shriner Pond HUMIC 3877 Blue-green algae and humic substances ILLINOIS Dynamics of nutrient concentrations in the Illinois River 3788 3795 Existing levels of nitrates in waters -- the Illinois situation IMPOUNDMENTS see also LAKES, RESERVOIRS 3899 A mathematical model of water quality in an impoundment Limnological investigations of Texas impoundments for water quality 3752 management purposes -- limnological and water quality data for the Highland Lakes, 1968 3803 Fertility and aquatic biomass in Southeastern impoundments Limnological investigations of Texas impoundments for water quality 3866 management purposes -- the use of algal cultures to assess the effects of nutrient enrichment on the Highland Lakes of the Colorado River, Texas INDICATORS 4027 Plankton as indicators of pollution in New York waters Symposium on planktonic organisms as biological indicators of 4174 their environment (Preliminary reports) INDUSTRIES Aquatic biology and the pulp and paper industry (Report No. 2) 3929 INORGANIC 3522 Oceanography of the Black Sea: Inorganic nitrogen compounds The role of inorganic ions in the eutrophication of farm ponds 3549 3666 Sorption of inorganic phosphate by lake sediments Fractionation of inorganic phosphate in calcareous lake sediments 3733 A review of literature of inorganic nitrogen metabolism in micro-3809 organisms Microbiological aspects of the pollution of fresh water with 3960 inorganic nutrients Phytoplankton photosynthesis, micronutrient interactions, and 4175 inorganic carbon availability in a soft water Vermont lake

INVERTEBRATES	
Species diversity of benthic macroinvertebrates in three Michigan streams	383(
IONS	
Ion transport studies on phytoplankton of a fish pond at Ile-ile	3953
The role of inorganic ions in the eutrophication of farm ponds	3549
The physiological state with respect to nitrogen of phytoplankton from low nutrient subtropical water as masured by the effect of ammonium ion on dark carbon dioxide fixation	4196
IRON	
Available iron: a limiting factor for marine phytoplankton	4042
Changes in pigment composition and photosynthesis induced by iron deficiency in the blue-green alga Anacystis nidulans	4201
JUNCUS	
The dynamics of dry matter and chemical substances in a <i>Juncus</i> effusus population	3982
KINETICS	
Kinetics of synthesis of nitrogenase in batch and continuous culture of Anabaena flos aquae	40:
Phytoplankton kinetics in a subtropical estuary: Eutrophication	4019
LAGOONS	
Phytoplankton energetics in a sewage treatment lagoon	3893
Carbon limitation in sewage lagoons	4128
LAKES	
Preliminary investigation of the low dissolved oxygen concentra- tions that exist in Long Lake located near Spokane, Washington	3518
Eutrophication, silica depletion, and predicted changes in algal quality in Lake Michigan	3640
Lake eutrophication: A laboratory investigation	365:
Nutrients and nutrient budgets in the Bay of Quinte, Lake Ontario	3659
Ultraviolet combustion of dissolved organic nitrogen compounds in lake waters	366:
Sorption of inorganic phosphate by lake sediments	3660
Nitrogen cycle and primary production in mesotrophic Lake Lucerne (Horwer Bay) and in eutrophic Red Lake with special regard to nitrates as limiting factors	3668
The primary productivity and limiting nutrients of Little Brooklyn lake	3670
Fractionation of inorganic phosphate in calcareous lake sediments	373
Lake George, Uganda. Studies on a tropical ecosystem	375:
Onondaga Lake study	3754

LAKES (Continued)

Distribution of trace elements and chlorophyll \dot{lpha} in Lake Ontario	3770
The local influence of continuous waste water from a point source; direct information of the growth limiting effect of phosphorus in the Lake of Lucerne	3791
Studies on Lake Tjeukemeer	3792
Aqueous phosphate and lake sediment interaction	3793
Catalytic mobilization of phosphate in lake water by Cyanophyta	3811
Survey of phytoplankton productivity and nutrients in Lake Michigan and Lake Superior	3815
Lake Kinneret: The nutrient chemistry of the sediments	3816
Changes in the chemical composition of sediments of Lake Washington, 1958-1970.	3817
Nutrients in Lake Ontario	3818
Mineralization of organic phosphorus in oligotrophic lake sediments	3823
Primary productivity, chemo-organotrophy, and nutritional inter- actions of epiphytic algae and bacteria on macrophytes in the littoral of a lake	3860
Aquatic plant communities in Lake Butte des Morts. Phase 2. Effects of higher aquatic plants, marsh water and marsh sediments on phytoplankton	3890
Plankton productivity studies in Lake St. Clair	3895
Chemical limnology of a developing reservoir (Lake Meredith) in Texas Panhandle	3931
Limiting nutrient elements in filtered Lake Erie water	3963
Effects of secondary and tertiary wastewater effluents on algal growth in a lake-river system	3968
Nitrogen fixation by bacteria in Lake Mize, Florida, and in some lacustrine sediments	3996
Nitrogen fixation in Lake Erken	4028
A freshwater red tide on Clear Lake, California	4034
Chemistry of surface sediments of sixteen lakes in the Experimental Lakes Area, Northwestern Ontario	3517
A review of studies on the bottom sediments of lakes	3530
Comparison of the primary production of phytoplankton in three lakes of different trophic type	3599
Primary production and phytoplankton in the Experimental Lakes Area Northwestern Ontario, and other low-carbonate waters, and a liquid scintillation method for determining 14 C activity in photosynthesis	
Preliminary chemical characterization of waters in the Experimental Lakes Area, Northwestern Ontario	3634

LAKES (Continued)

	Chemical factors involved in the control of phytoplankton pro- duction in the Experimental Lakes Area, Northwestern Ontario	366!
	Periphyton of the Experimental Lakes Area, Northwestern Ontario	370:
	Trophic state of lakes in north central Florida	374.
	Limnological investigations of Texas impoundments for water quality management purposeslimnological and water quality data for the Highland Lakes, 1968	3752
	A quantitative method for the determination of chlorin pigments in the Great Lakes sediment	3772
	On the question of introduction of purified waste water into lakes	3790
	Acetylene reduction (nitrogen fixation) in Wisconsin lakes	3810
	Limnological investigations of Texas impoundments for water quality management purposes—the use of algal cultures to assess the effects of nutrient enrichment on the Highland Lakes of the Colorado River, Texas	3866
	Production in several Mazurian lakes	3871
	Nitrogen and carbon distribution in sediment cores of selected Wisconsin lakes	391(
	Plant available phosphorus status of lakes	3940
	Importance of denitrification and nitrate reduction in sediments to nitrogen budgets of lakes	3961
	The chemical investigation of recent lake sediments from Wisconsin lakes and their interpretation	4109
	Interactions of dissolved and particulate nitrogen in lake metabolism	4131
	Biogeochemistry of lakes: Major substances	411C
	The role of carbon in hard water marl lakes	414C
	Phosphorus, silica, and eutrophication of Lake Michigan	4134
	Algal populations in Moses Lake, Washington. Temporal and spatial distribution and relationship with environmental parameters	4178
	Eutrophication of surface waters Lake Tahoe pilot pond and field studies	4130
	Nutrients and phytoplankton in Lake Washington	4181
	Phytoplankton photosynthesis, micronutrient interactions, and inorganic carbon availability in a soft water Vermont lake	4175
LEAV	ES	
	The fate of the dead leaves that fall into streams	3800
LIGH	T	
	The nature of the photosynthate in natural phytoplankton populations in relation to light quality	3894
	Relationship between light carbon dioxide fixation and dark carbon dioxide fixation by marine algae	4197

366!

LIMITING

	model of nutrient limited phytoplaneton growth	3947
U	se of tests for limiting or surplus nutrients to evaluate sources of nitrogen and phosphorus for algae and aquatic weeds	3542
N	itrogen cycle and primary production in mesotrophic Lake Lucerne (Horwer Bay) and in eutrophic Red Lake with special regard to nitrates as limiting factors	3668
Т	he primary productivity and limiting nutrients of Little Brooklyn Lake	3670
Т	The local influence of continuous waste water from a point source; direct information of the growth limiting effect of phosphorus in the Lake of Lucerne	3791
N	Nutrient limiting factors in an arctic tundra pond	3954
L	imiting nutrient elements in filtered Lake Erie water	3963
A	review of the factors limiting the growth of nuisance algae	3966
A	Available iron: A limiting factor for marine phytoplankton	4042
C	Carbon limitation in sewage lagoons	4128
(Characterization of phosphorus limited plankton algae	4124
7	The role of minor nutrients in limiting the productivity of aquatic ecosystems	4126
ì	Nutrients and eutrophication: The limiting nutrient controversy	4117
	LOGY see also FRESHWATER	
	A study of the limnetic zooplankton of five flood control reservoirs	3833
1	Limnological investigations of Texas impoundments for water quality management purposes limnological and water quality data for the Highland Lakes, 1968	3752
	Limnological investigations of Texas impoundments for water quality management purposes the use of algal cultures to assess the effects of nutrient enrichment on the Highland Lakes of the Colorado River, Texas	
	Some observations on the limnology of a pond receiving animal waste	
	Chemical limnology of a developing reservoir (Lake Meredith) in the Texas Panhandle	3931
LITTO		
	Primary productivity, chemo-organotrophy, and nutritional inter- actions of epiphytic algae and bacteria on macrophytes in the littoral of a lake	3860
MACRO	OPHYTES see also PLANTS, VEGETATION, WEEDS (see also specific phyllustration)	m, crass
	Evidence that nitrogen supply influences the distribution of a freshwater macrophyte, Ceratophyllum demersum	3990
	The dynamics of dry matter and chemical substances in a $\it Juncus$ $\it effusus$ population	3982

MACROPHYTES (Continued)	
Respiration of aquatic macrophytes in eutrophic ecosystems	3573
Developments in the use of herbicides for the control of aquatic macrophytes	3729
Primary productivity, chemo-organotrophy, and nutritional inter- actions of epiphytic algae and bacteria on macrophytes in the littoral of a lake	3860
The distribution, the phytosociological composition and the ecology of the vascular macrophytes in the Moosach River system near Munich	3998
MANAGEMENT	
Nutrient management in the Potomac Estuary	3545
Limnological investigations of Texas impoundments for water quality management purposes limnological and water quality data for the Highland Lakes, 1968	3752
Limnological investigations of Texas impoundments for water quality management purposes the use of algal cultures to assess the effects of nutrient enrichment on the Highland Lakes of the Colorado River, Texas	3866
Optimal estuarine water quality management	4080
MANURE see also ANIMAL, CATTLE, FARM WASTES, FEED LOTS	
Manure transformations and fate of decomposition products in water	3967
MARINE see also OCEANOGRAPHY	2600
Toxicity of ammonia to marine diatoms	3698
Levels of dissolved oxygen and carbon fixation by marine microalgae	
Occurrence and distribution of phosphate solubilizing bacteria and phosphatase in marine sediments at Porto Novo	3941
Available iron: A limiting factor for marine phytoplankton	4042
Extrusion of carbon accompanying uptake of amino acids by marine phytoplankters	4060
Release of dissolved organic matter from natural populations of marine phytoplankton	4063
Relationships of autotrophic ammonium oxidizing bacteria to marine salts	4153
Relationship between light carbon dioxide fixation and dark carbon dioxide fixation by marine algae	4197
The seasonal variation of dissolved organic carbon in the inshore waters of the Menai Strait in relation to primary production	4195
The relative importance of nannoplankton and netplankton as primary producers in tropical oceanic and neritic phytoplankton communities	
MARL	
The role of carbon in hard water marl lakes MARSHES	4140
Aquatic plant communities in Lake Butte des Morts. Phase 2. Effects of higher aquatic plants, marsh water and marsh sediments on phytoplankton	3890
Effect of marshes on water quality	3804

MATHEMATICS see also MODELS	
A mathematical model of water quality in an impoundment	3899
Development of a mathematical model to predict the role of surface runoff and groundwater flow in overfertilization of surface waters	4077
Mathematical modeling of nutrient transport	4122
MEASUREMENT see also ANALYSIS, ASSESSMENT, ASSAY, DETERMINATIONS, TESTS	
Laboratory tests for plant operation control and stream quality measurement	3635
Microbiological studies on nitrogen fixation in aquatic environ- ments V. Modification of acetylene method for the measurement of <i>in situ</i> rate of nitrogen fixation	3975
A pH-carbon dioxide method for measuring aquatic primary productivit	y 3782
MESOTROPHIC	
Nitrogen cycle and primary production in mesotrophic Lake Lucerne (Horwer Bay) and in eutrophic Red Lake with special regard to nitrates as limiting factors	3668
METABOLSIM	
Enteric bacterial metabolism of stream sediment eluates	3544
A review of literature on inorganic nitrogen metabolism in micro- organisms	3809
Interactions of dissolved and particulate nitrogen in lake metaboli	sm 4131
METHODS see also ANALYSIS, ASSAY, ASSESSMENT, DETERMINATIONS, TESTS	
A modified spectrophotometric method for the determination of of ammonia (and amino acids) in natural waters, with particular reference to sea water	3551
Primary production and phytoplankton in the Experimental Lakes Area Northwestern Ontario, and other low carbonate waters, and a liqui scintillation method for determining ¹⁴ C activity in photosynthes	. Cl
A quantitative method for the determination of chlorin pigments in Great Lakes sediment	3772
A rapid method for the estimation of the carbon content of seston and periphyton	3781
A pH-carbon dioxide method for measuring aquatic primary productivi	ty 3782
Microbiological studies on nitrogen fixation in aquatic environments V. Modification of acetylene method for the measurement of in situ rate of nitrogen fixation	3975
MICHIGAN	0.65
Sorption of soluble phosphates by freshwater sediments in the Huron River basin, Michigan	3661
Species diversity of benthic macroinvertebrates in three Michigan	3830

MICROALGAE

MUD see also SEDIMENTS

Levels of dissolved oxygen and carbon fixation by marine microalgae	3864
MICROBES	
Microbial degradation of detergent phosphates	38229
MICROBIOLOGY	
Development of physico-chemical and microbiological characteristics preceding summer stagnation in a reservoir	3541
Microbiological studies on nitrogen fixation in aquatic environ- ments II. On the distribution of nitrogen fixing bacteria in sea water regions	3955
Microbiological studies on nitrogen fixation in aquatic environ- ments I. On the distribution of nitrogen fixing bacteria in fresh water regions	3956
Microbiological studies on nitrogen fixation in aquatic environments IV. On the nitrogen fixing bacteria in culture ponds	s 395
Microbiological aspects of the pollution of fresh water with in- organic nutrients	3960
Microbiological studies on nitrogen fixation in aquatic environments V. Modification of acetylene method for the measurement of <i>in situ</i> rate of nitrogen fixation	3975
Microbiological studies on nitrogen fixation in aquatic environments. VI. On the $in\ situ$ nitrogen fixation in water regions	4172
Water pollution microbiology	4170
MICROFLORA	
Particulate fractions in water and the relationship to aquatic microflora	3548
Bacterial microflora in Chlorella vulgaris culture MINERALIZATION	4166
Mineralization of organic phosphorus in oligotrophic lake sediments	3823
MIXING	
Effects of low nutrient dilution water and mixing on the growth of nuisance algae	4216
MODELS see also MATHEMATICS	
A model of nutrient-limited phytoplankton growth	3947
MOLLUSKS	
The excretion of ammonia and urea by Mya arenaria L. (Mollusca: Bivalvia)	3537
MORPHOLOGY	
The influence of nutrient pollution levels upon element constitution and morphology of Elodea canadensis Rich. in Michx.	a 4141

Oxidation-reduction determinations at the mud-water interface

3936

The excretion of ammonia and urea by Mya arenaria L. (Mollusca: 3. Bivalvia)	537
NANNOPLANKTON	
Diurnal rhythms in netplankton and nannoplankton assimilation ratios	3882
The relative importance of nannoplankton and netplankton as primary producers in tropical oceanic and neritic phytoplankton communities	
The relative importance of nannoplankton and netplankton as primary producers in the California Current system	4044
NETPLANKTON	
Diurnal rhythms in netplankton and nannoplankton assimilation ratios	
The relative importance of nannoplankton and netplankton as primary producers in tropical oceanic and neritic phytoplankton communities	>
The relative importance of nannoplankton and netplankton as primary producers in the California Current system	4044
NITRATE	
to fertilizer use	3550
Regulation of nitrate reductase in Chioretta buoyarto	3667
in chlD mutants of Escherichia coli	3831
Importance of denitrification and nitrate reduction in Bediments to nitrogen budgets of lakes	3961
Chemical changes, including nitrate reduction, in barwin bay, Galapagos Archipelago, over a 2-month period, 1969	3972
Phytoplankton growth and composition in shipboard cultures supplied with nitrate, ammonium, or urea as the nitrogen source	4022
Nitrogen cycle and primary production in mesotrophic Lake Lucerne (Horwer Bay) and in eutrophic Red Lake with special regard to nitrates as limiting factors	3668
Existing levels of nitrates in waters the Illinois situation	3795
Rural sources of nitrates in water	3797
NITRITE	
Nitrite distribution and its regulating processes in the equatorial Pacific Ocean	
Dependence of nitrite assimilation in green algae on energy supplied by respiration and photosynthesis	1 4032
NITROGEN see also ACETYLENE for "Nitrogen fixation"	2522
Oceanography of the Black Sea: Inorganic nitrogen compounds	3522
Losses of nitrogen and phosphorus from agricultural land	3539
Use of tests for limiting or surplus nutrients to evaluate sources of nitrogen and phosphorus for algae and aquatic weeds	3542

NITROGEN (Continued)

The relative significance of phosphorus and nitrogen as algal nutrients	3556
Studies on the physiology of heterocyst production in the nitrogen fixing blue-green alga <i>Anabaena</i> sp. L-31 in continuous culture	3605
Effect of John Day Dam on dissolved nitrogen concentrations and salmon in the Columbia River, 1968	3650
Particulate carbon-nitrogen relations in northern Chesapeake Bay	3654
Ultraviolet combustion of dissolved organic nitrogen compounds in lake waters	3663
Nitrogen cycle and primary production in mesotrophic Lake Lucerne (Horwer Bay) and in eutrophic Red Lake with special regard to nitrates as limiting factors	3668
Secondary effects of nitrogen in water	3783
A review of literature on inorganic nitrogen metabolism in micro- organisms	3809
The nitrogen cycle	3814
The effect of various nitrogen sources upon the production of extracellular polysaccharide by the blue-green alga Anabaena flos aquae A-37	3891
Nitrogen and carbon distribution in sediment cores of selected Wisconsin lakes	3910
Microbiological studies on nitrogen fixation in aquatic environments II. On the distribution of nitrogen fixing bacteria in sea water regions	3955
Microbiological studies on nitrogen fixation in aquatic environments I. On the distribution of nitrogen fixing bacteria in fresh water regions	3956
Microbiological studies on nitrogen fixation in aquatic environments I. On the nitrogen fixing bacteria in culture ponds	3957
The fate of nitrogen in aquatic ecosystems	3958
The nitrogen cycle in sediment-water systems	3959
Importance of denitrification and nitrate reduction in sediments to nitrogen budgets of lakes	3961
Microbiological studies on nitrogen fixation in aquatic environments V. Modification of acetylene method for the measurement of in situ rate of nitrogen fixation	3975
Evidence that nitrogen supply influences the distribution of a freshwater macrophyte, Ceratophyllum demersum	3990
Nitrogen fixation by bacteria in Lake Mize, Florida, and in some lacustrine sediments	3996
Phytoplankton growth and composition in shipboard cultures supplied with nitrate, ammonium, or urea as the nitrogen source	4022
Nitrogen fixation in Lake Erken	4028

NITROGEN (Continued)	
Localization of nitrogen fixation in Anabaena	4065
Blue-green algal responses to some organic nitrogen substrates	4070
The role of nitrogen in eutrophic processes	4125
Interactions of dissolved and particulate nitrogen in lake metabolism	4131
Nitrogen fixation in an estuarine environment: The Waccasasa on the Florida Gulf Coast	4145
Microbiological studies on nitrogen fixation in aquatic environments. VI. On the $in\ situ$ nitrogen fixation in water regions	4172
Nitrogen fixation and heterocysts in the blue-green alga Anabaena cylindrica	4200
Influence of nitrogen deficiency on uridine incorporation into ribosomes in the green alga $\it Chlorella$	4208
NITROGENASE	
Characteristics of nitrogenase activity in broken cell preparations of the blue-green algae Gloeocapsa sp. LB-795	4183
Characteristics of the nitrogenase system of the blue-green alga Anabaena cylindrica	4187
Photorespiration and nitrogenase activity in the blue-green alga Anabaena cylindrica	4191
Acetylene-ethylene assay for nitrogenase activity in Keystone Reservoir, Oklahoma	3656
Kinetics of synthesis of nitrogenase in batch and continuous culture of Anabaena flos aquae	4017
NUISANCE	
A review of the factors limiting the growth of nuisance algae	3966
Effects of low nutrient dilution water and mixing on the growth of nuisance algae	4216
NUTRIENTS	
Nutrient management in the Potomac Estuary	3545
Nutrient balances in rivers	3547
Algal growth and decomposition effects on water quality, Phase II. Composition, decomposition, and nutrient regeneration of algae in batch culture	. 3596
Nutrients and nutrient budgets in the Bay of Quinte, Lake Ontario	3659
Dynamics of nutrient concentrations in the Illinois River	378
Lake Kinneret: The nutrient chemistry of the sediments	381
Limnological investigations of Texas Impoundments for water quality management purposes — the use of algal cultures to assess the effects of nutrient enrichment of the Highland Lakes of the Colorado River, Texas	386

NUTRIENTS (Continued)

A model of nutrient-limited phytoplankton growth	3947
Nutrient limiting factors in an arctic tundra pond	3954
Limiting nutrient elements in filtered Lake Erie water	3963
Further studies on productivity, nutrient and pigment relation- ships in <i>Typha latifolia</i> populations	3981
Relationships between production, nutrient accumulation, and chlorophyll synthesis in an <i>Eleocharis quadrangulata</i> population	3984
Thermal effects on biological production in nutrient rich ponds	4008
Use of tests for limiting or surplus nutrients to evaluate sources of nitrogen and phosphorus for algae and aquatic weeds	3542
The relative significance of phosphorus and nitrogen as algal nutrients	3556
The effects of varying concentrations of nutrients, chlorinity, and dissolved oxygen on polychaetous annelids	3580
Nutrients and nutrient budgets in the Bay of Quinte, Lake Ontario	3659
The primary productivity and limiting nutrients of Little Brooklyn Lake	3670
Survey of phytoplankton productivity and nutrients in Lake Michigan and Lake Superior	3815
Nutrients in Lake Ontario	3818
Microbiological aspects of the pollution of fresh water with inorganic nutrients	3960
Nutritional ecology and community structure of the phytoplankton of Green Bay	3664
Primary productivity, chemo-organotrophy, and nutritional inter- actions of epiphytic algae and bacteria on macrophytes in the littoral of a lake	3860
Nutritive quality of food in ecological systems	3983
Mathematical modeling of nutrient transport	4122
Nutrient flux in estuaries	4132
The influence of nutrient pollution levels upon element constitution and morphology of Elodea canadensis Rich. in Michx.	4141
Algal responses to nutrient additions in natural waters. I. Laboratory assays	4192
Algal responses to nutrient additions in natural waters. II. Field experiments	4203
Effects of low nutrient dilution water and mixing on the growth of nuisance algae	4216
Nutrients and eutrophication. The limiting nutrient controversy	4117
The role of minor nutrients in limiting the productivity of aquatic	4126

NUTRIENTS (Continued)	
Nutrients and phytoplankton in Lake washington	4181
Phytoplankton photosynthesis, micronutrient interactions, and inorganic carbon availability in a soft water Vermont lake	4175
OCEAN see MARINE	
OCEANOGRAPHY see also MARINE	
Oceanography of the Black Sea: inorganic hitrogen compounds	3522
Oceanography of the nearshore coastal waters of the Pacific Northwest relating to possible pollution. Volume II	3776
OKLAHOMA	2656
Acetylene-ethylene assay for nitrogenase activity in Keystone Reservoir, Oklahoma	3656
OLIGOTROPHIC	2022
Mineralization of organic phosphorus in oligotrophic lake sediments	3023
ONTARIO see also CANADA	2517
Chemistry of surface sediments of sixteen lakes in the Experimental Lakes Area, Northwestern Ontario	3517
Primary production and phytoplankton in the Experimental Lakes Area, Northwestern Ontario, and other low carbonate waters, and a liquid scintillation method for determining 14C activity in photosynthesis	3604
Preliminary chemical characterization of waters in the Experimental Lakes Area. Northwestern Ontario	3634
Nutrients and nutrient budgets in the Bay of Quinte, Lake Ontario	3659
Chemical factors involved in the control of phytoplankton pro- duction in the Experimental Lakes Area, Northwestern Ontario	3665
Periphyton of the Experimental Lakes Area, Northwestern Ontario	3702
Distribution of trace elements and chlorophyll α in Lake Ontario	3770
Nutrients in Lake Ontario	3818
ORGANIC	
Ultraviolet combustion of dissolved organic nitrogen compounds	3663
Influence of organic matter on some characteristics of aquatic sof	ls 376
Influence of medium pH and carbon dioxide on assimilation of some	3010
Mineralization of organic phosphorus in oligotrophic lake sediment	s 3823
Release of dissolved organic matter from natural populations of	4003
Rive-green algal responses to some organic nitrogen substrates	4070
Primary productivity, chemo-organotrophy, and nutritional inter- actions of epiphytic algae and bacteria on macrophytes in the littoral of a lake	386

ORGANIC (Continued)	
Organic carbon budget of the Black Sea	4121
The seasonal variation of dissolved organic carbon in the inshore waters of the Menai Strait in relation to primary production	4195
OXIDATION	
Oxidation-reduction determinations at the mud-water interface	3936
Relationships of autotrophic ammonium-oxidizing bacteria to marine salts	4153
OXYGEN	
Preliminary investigation of the low dissolved oxygen concentrations that exist in Long Lake located near Spokane, Washington	351
The effects of varying concentrations of nutrients, chlorinity, and dissolved oxygen on polychaetous annelids	3580
Levels of dissolved oxygen and carbon fixation by marine microalgae PACIFIC	3864
A preliminary study of the effects of water circulation in the San Francisco Bay. Part A. Some effects of fresh water inflow on the flushing of south San Francisco Bay. Part B. Movement of seabed drifters in the San Francisco Bay estuary and the adjacent Pacific Ocean	3763
Oceanography of the nearshore coastal waters of the Pacific North- west relating to possible pollution. Volume II	3776
Nitrite distribution and its regulating processes in the equatorial Pacific Ocean	3796
PAPER INDUSTRY	
Aquatic biology and the pulp and paper industry. (Report No. 2)	3929
PARTICULATE	
Particulate fractions in water and the relationship to aquatic microflora	3548
Particulate carbon-nitrogen relations in northern Chesapeake Bay	3654
The flux of particulate carbon in an estuary	4119
Interactions of dissolved and particulate nitrogen in lake metabolis PERIPHYTON	sm 41
Periphyton of the Experimental Lakes Area, Northwestern Ontario	3702
A rapid method for the estimation of the carbon content of seston and periphyton	3781
pH	
A pH-carbon dioxide method for measuring aquatic primary productivit	y 37
Influence of medium pH and carbon dioxide on assimilation of some organic acids by Scenedesmus quadricauda	3810

PHOSPHATASE Occurrence and distribution of phosphate solubilizing bacteria 3941 and phosphatase in marine sediments at Porto Novo 4016 Relationship between phosphates and alkaline phosphatase of Anabaena flos aquae in continuous culture **PHOSPHATE** 3666 Sorption of inorganic phosphate by lake sediments Factors affecting phosphate uptake by Aerobacter aerogenes in a system relating cell numbers to 32P uptake 3671 Fractionation of inorganic phosphate in calcareous lake sediments 3733 3793 Aqueous phosphate and lake sediment interaction 3811 Catalytic mobilization of phosphate in lake water by Cyanophyta Phosphate equilibria on stream sediment and soil in a watershed 3821 draining an agricultural region Occurrence and distribution of phosphate solubilizing bacteria 3941 and phosphatase in marine sediments at Porto Novo 3555 Phosphates in surface waters and detergents Sorption of soluble phosphates by freshwater sediments in the 3661 Huron River Basin, Michigan 3822 Microbial degradation of detergent phosphates Relationship between phosphates and alkaline phosphatase of 4016 Anabaena flos aquae in continuous culture Incorporation of 32PO4 directly taken up into acid soluble phosphates 4161 **PHOSPHORUS** Losses of nitrogen and phosphorus from agricultural land 3539 Use of tests for limiting or surplus nutrients to evaluate sources 3542 of nitrogen and phosphorus for algae and aquatic weeds 3553 Role of phosphorus in eutrophication The relative significance of phosphorus and nitrogen as algal 3556 nutrients The local influence of continuous waste water from a point source; 3791 direct information of the growth limiting effect of phosphorus in the Lake of Lucerne The interrelation of carbon and phosphorus in regulating hetero-3801 trophic and autotrophic populations in aquatic ecosystems 3806 The controversy bubbles on carbon versus phosphorus Mineralization of organic phosphorus in oligotrophic lake sediments 3823 3940 Plant available phosphorus status of lakes 3944 Behavior of soil and fertilizer phosphorus in relation to water pollution 3977 Significance of phosphorus in water supplies

PHOSPHORUS (Continued)	
Characterization of phosphorus-limited plankton algae	4124
The interrelation of carbon and phosphorus in regulating hetero- trophic and autotrophic populations in an aquatic ecosystem, Shriner Pond	4127
Aspects of phosphorus cycling in brackish waters	4129
Phosphorus, silica, and eutrophication of Lake Michigan	4134
The role of phosphorus in eutrophication	4137
Carnivorous pathway of phosphorus uptake by <i>Utricularia inflata</i> PHOTORESPIRATION	4164
Photorespiration and nitrogenase activity in the blue-green alga, Anabaena cylindrica	4191
PHOTOSYNTHESIS	
The nature of the photosynthate in natural phytoplankton populations in relation to light quality	3894
Primary production and phytoplankton in the Experimental Lakes Area, Northwestern Ontario, and other low carbonate waters, and a liquid scintillation method for determining ¹⁴ C activity in photosynthesis	3604
Dependence of nitrite assimilation in green algae on energy supplied by respiration and photosynthesis	4032
Ecological studies of economic red algae. I. Photosynthesis and respiration of <i>Chondrus crispus</i> (Stackhouse) and <i>Gigartina stellata</i> (Stackhouse) batters	4045
Liberation of extracellular products of photosynthesis by tropical phytoplankton	4054
Phytoplankton photosynthesis, micronutrient interactions, and inorganic carbon availability in a soft water Vermont lake	4175
Changes in pigment composition and photosynthesis induced by iron deficiency in the blue-green alga Anacystis nidulans PHYSICAL PROPERTIES	4201
	2761
A physical-chemical study of the flushing of the Santa Barbara Basin	3764
Chemical and physical findings from pollution studies on the East Gallatin River and its tributaries	3938
Development of physico-chemical and microbiological characteristics preceding summer stagnation in a reservoir	3541
PHYSIOLOGY	
Studies on the physiology of heterocyst production in the nitrogen fixing blue-green alga <i>Anabaena</i> sp. L-31 in continuous culture	3605

PHYTOPLANKTON

marine phytoplankters	4060
Comparison of the primary production of phytoplankton in three lakes of different trophic type	3599
Primary production and phytoplankton in the Experimental Lakes Area, Northwestern Ontario, and other low carbonate waters, and a liquid scintillation method for determining 14°C activity in photosynthesis	3604
Nutritional ecology and community structure of the phytoplankton of Green Bay	3664
Chemical factors involved in the control of phytoplankton pro- duction in the Experimental Lakes Area, Northwestern Ontario	3665
Survey of phytoplankton productivity and nutrients in Lake Michigan and Lake Superior	3815
Phytoplankton primary production in some Finnish coastal areas in relation to pollution	3863
Phytoplankton primary production in the Baltic area	3879
Phytoplankton primary production off the coast of Helsinki	3880
Aquatic plant communities in Lake Butte des Morts. Phase 2, Effects of higher aquatic plants, marsh water and marsh sedi- ments on phytoplankton	3890
Phytoplankton energetics in a sewage treatment lagoon	3893
The nature of the photosynthate in natural phytoplankton population in relation to light quality	s 3894
A model of nutrient limited phytoplankton growth	3947
Ion transport studies on phytoplankton of a fish pond at Ile-ile	3953
Phytoplankton kinetics in a subtropical eastuary: Eutrophication	4019
Continuous cultures of natural populations of phytoplankton in dilute, treated sewage effluent	4021
Phytoplankton growth and composition in shipboard cultures supplied with nitrate, ammonium, or urea as the nitrogen source	4022
Available iron: a limiting factor for marine phytoplankton	4042
Available iron: a limiting factor for marine phytoplankton The relative importance of nannoplankton and netplankton as primary producers in tropical oceanic and neritic phytoplankton communities	4043
The relative importance of nannoplankton and netplankton as primary producers in tropical oceanic and neritic phytoplankton communities Liberation of extracellular products of photosynthesis by tropical phytoplankton	4043
The relative importance of nannoplankton and netplankton as primary producers in tropical oceanic and neritic phytoplankton communities Liberation of extracellular products of photosynthesis by tropical phytoplankton Release of dissolved organic matter from natural populations of marine phytoplankton	4043 4054 4063
The relative importance of nannoplankton and netplankton as primary producers in tropical oceanic and neritic phytoplankton communities Liberation of extracellular products of photosynthesis by tropical phytoplankton Release of dissolved organic matter from natural populations of marine phytoplankton Phytoplankton photosynthesis, micronutrient interactions, and	4043 4054 4063 4175
The relative importance of nannoplankton and netplankton as primary producers in tropical oceanic and neritic phytoplankton communities Liberation of extracellular products of photosynthesis by tropical phytoplankton Release of dissolved organic matter from natural populations of marine phytoplankton	4043 4054 4063

PIGMENTS

Further studies on productivity, nutrient and pigment relation-ships in <i>Typha latifolia</i> populations	3981
A quantitative method for the determination of chlorin pigments in Great Lakes sediment	3772
Changes in pigment composition and photosynthesis induced by by iron deficiency in the blue-green alga Anacystis nidulans	4201
PLANKTON	
Plankton productivity studies in Lake St. Clair	3895
Plankton as indicators of pollution in New York waters	4027
Water quality and plankton ecology the Christina River, Delawa	re 4057
A hypothesis concerning silica and the freshwater planktonic diatoms	3802
Characterization of phosphorus limited plankton algae	4124
Symposium on planktonic organisms as biological indicators of their environment. (Preliminary reports)	4174
PLANTS see also MACROPHYTES, VEGETATION, WEEDS (see also specific phy order, family, etc.)	Llum, cl
Aquatic plant communities in Lake Butte des Morts. Phase 2. Effects of higher aquatic plants, marsh water and marsh sediments on phytoplankton	3890
Plant available phosphorus status of lakes	3940
The dynamics of dry matter and chemical substances in a <i>Juncus</i> effusus population	3982
Relationships between production, nutrient accumulation, and chlorophyll synthesis in an Eleocharis quadrangulata population	3984
Further studies on productivity, nutrient and pigment relation- ships in <i>Typha latifolia</i> populations	3981
Parameters affecting the growth of <i>Ulva latissima</i> in a polluted estuary	3857
Control of water milfoil in Wisconsin	4223
The influence of nutrient pollution levels upon element constitution and morphology of Elodea canadensis Rich. in Michx.	4141
Improving surface water conditions through control and disposal of aquatic vegetation. Phase I. Processing aquatic vegetation for improved handling and disposal or utilization	4220
POLLUTION	
Effects of agricultural pollutants on recreational uses of surfact waters	e 3945
Parameters affecting the growth of Ulva latissima in a polluted estuary	3857
Interpretation of results from the studies of pollution of surface flowing waters	3525

POLLUTION (Continued)

	Oceanography of the nearshore coastal waters of the Pacific Northwest relating to possible pollution. Volume II	3776
	Assessment of surface water quality by a single index of pollution	3777
	Phytoplankton primary production in some Finnish coastal areas in relation to pollution	3863
	Chemical and physical findings from pollution studies on the East Gallatin River and its tributaries	3938
	Effects of agricultural pollution on eutrophication	3939
	Behavior of soil and fertilizer phosphorus in relation to water pollution	3944
	Microbiological aspects of the pollution of fresh water with inorganic nutrients	3960
	Plankton as indicators of pollution in New York waters	4027
	Estimating eutrophic potential of pollutants	4194
	The influence of nutrient pollution levels upon element constitution and morphology of <i>Elodea canadensis</i> Rich. in Michx.	4141
	Water pollution microbiology	4170
POND:	S	
	Chemical characterization of pond sediments	3639
	Some observations on the limnology of a pond receiving animal wastes	3669
	Ion transport studies on phytoplankton of a fish pond at Ile-ile	3953
	Nutrient limiting factors in an arctic tundra pond	3954
	The role of inorganic ions in the eutrophication of farm ponds	3549
	Microbiological studies on nitrogen fixation in aquatic environ- ments IV. On the nitrogen fixing bacteria in culture ponds	3957
	Thermal effects on biological production in nutrient rich ponds	4008
	Eutrophication of surface waters Lake Tahoe pilot pond and field studies	4130
	The interrelation of carbon and phosphorus in regulating hetero- trophic and autotrophic populations in an aquatic ecosystem, Shriner Pond	4127
POPL	JLATIONS see also SYSTEMATICS	
	Studies on freshwater bactria: factors which influence the population and its activity	3679
	The dynamics of dry matter and chemical substances in a Juncus effusus population	3982
	Relationships between production, nutrient accumulation, and chlorophyll synthesis in an Eleocharis quadrangulata population	3984
	The interrelation of carbon and phosphorus in regulating hetero- trophic and autotrophic populations in aquatic ecosystems	3801

POPULATIONS (Continued)	38
The nature of the photosynthate in natural phytoplankton populations in relation to light quality	
Further studies on productivity, nutrient and pigment relationships in Typha latifolia populations	-
Continuous cultures of natural populations of phytoplankton in dilute, treated sewage effluent	401
Release of dissolved organic matter from natural populations of marine phytoplankton	40
An experimental approach to the production dynamics and structure of freshwater animal communities	37!
Aquatic plant communities in Lake Butte des Morts. Phase 2. Ef- fects of higher aquatic plants, marsh water and marsh sediment on phytoplankton	389
The relative importance of nannoplankton and netplankton as primary producers in tropical oceanic and neritic phytoplankton communiti	4() es
Nutritional ecology and community structure of the phytoplankton of Green Bay	36t
Species diversity of benthic macroinvertebrates in three Michigan streams	383
Microbiological studies on nitrogen fixation in aquatic environ- mentsII. On the distribution of nitrogen fixing bacteria in sea water regions	395
Microbiological studies on nitrogen fixation in aquatic environ- mentsI. On the distribuiion of nitrogen fixing bacteria in fresh water regions	395
Evidence that nitrogen supply influences the distribution of a freshwater macrophyte, Ceratophyllum demersum	399
The interrelation of carbon and phosphorus in regulating hetero- trophic and autotrophic populations in an aquatic ecosystem, Shriner Pond	412
Algal populations in Moses Lake, Washington: Temporal and spatial distribution and relationship with environmental parameters PRIMARY PRODUCTIVITY	4178
Comparison of the primary production of phytoplankton in three lakes of different trophic type	3599
Primary production and phytoplantkon in the Experimental Lakes Area Northwestern Ontario, and other low carbonate waters, and a liqui scintillation method for determining ¹⁴ C activity in photosynthes	1
Primary production	3662
Nitrogen cycle and primary production in mesotrophic Lake Lucerne (Horwer Bay) and in eutrophic Red Lake with special regard to nitrates as limiting factors	3668
The primary productivity and limiting nutrients of Little Brooklyn Lake	367 0
A pH-carbon dioxide method for measuring aquatic primary productivi	try 27
Primary productivity, chemo-organotrophy, and nutritional inter- actions of epiphytic algae and bacteria on macrophytes in the littoral of a lake	386 0

PRIMARY PRODUCTIVITY (Continued)

Primary productivity in five Salt Valley reservoirs	3861
	3863
	3879
	3880
	4043
The relative importance of mannoplankton and netplankton as primary producers in the California Current system	4044
The seasonal variation of dissolved organic carbon in the inshore waters of the Menai Strait in relation to primary production	4195
	4202
PRODUCTIVITY	2605
Studies on the physiology of heterocyst production in the nitrogen fixing blue-green alga <i>Anabaena</i> sp. L-31 in continuous culture	3605
Chemical factors involved in the control of phytoplankton production in the Experimental Lakes Area, Northwestern Ontario	1 3665
An experimental approach to the production dynamics and structure of freshwater animal communities	3794
Production in several Mazurian lakes	3873
The effect of various nitrogen sources upon the production of extracellular polysaccharide by the blue-green alga Anabaena flos aquae A-37	3891
Relationships between production, nutrient accumulation, and chloro- phyll synthesis in an <i>Eleocharis quadrangulata</i> population	3984
Thermal effects on biological production in nutrient rich ponds	4008
Survey of phytoplankton productivity and nutrients in Lake Mich- igan and Lake Superior	3815
Productivity problems of freshwaters	3875
Plankton productivity studies in Lake St. Clair	3895
Further studies on productivity, nutrient and pigment relationships in Typha latifolia populations	3981
The role of minor nutrients in limiting the productivity of aquatic ecosystems	4126
PULP AND PAPER INDUSTRY	
Aquatic biology and the pulp and paper industry. (Report No. 2)	3929
RECREATION	
Effects of agricultural pollutants on recreational uses of surface waters	394

RED ALGAE	
Ecological studies on economic red algae. I. Photosynthesis and respiration of <i>Chondrus crispus</i> (Stackhouse) and <i>Gigartina stellata</i> (Stackhouse) batters	404
RED TIDE	
A freshwater red tide on Clear Lake, California	403
RESERVOIRS see also IMPOUNDMENTS, LAKES	
Development of physico-chemical and microbiological characteristics preceding summer stagnation in a reservoir	354
Acetylene-ethylene assay for nitrogenase activity in Keystone Reservoir, Oklahoma	365
The daily carbon gains and losses in the seston of Queen Mary Reservoir, England, during 1968	381
Chemical limnology of a developing reservoir (Lake Meredith) in Texas Panhandle	393
A study of the limnetic zooplankton of five flood control reservoirs	38
Primary productivity in five Salt Valley reservoirs	386
RESOURCES	
A water resource-water supply study of the Potomac Estuary	379
RESPIRATION	
Respiration of aquatic macrophytes in eutrophic ecosystems	357
Dependence of nitrite assimilation in green algae on energy supplied by respiration and photosynthesis	403
Ecological studies of economic red algae. I. Photosynthesis and respiration of <i>Chondrus crispus</i> (Stackhouse) and <i>Gigartina stellata</i> (Stackhouse) batters	404.
REVIEWS	
A review of studies on the bottom sediments of lakes	3530
A review of literature on inorganic nitrogen metabolism in micro- organisms	3809
A review of the factors limiting the growth of nuisance algae	3966
RHYTHMS	
Diurnal rhythms in netplankton and nannoplankton assimilation ratios	3882
RIVERS see also STREAMS	
Current water quality conditions and investigation in the upper Potomac River tidal System	3649
Effect of John Day Dam on dissolved nitrogen concentrations and salmon in the Columbia River, 1968	3650
Sorption of soluble phosphates by freshwater sediments in the Huron River basin. Michigan	3661

RIVERS (Continued)

Maintenance of a functional environment in the lower portion of the Hudson River Estuary: an appraisal of the estuary	3750
Dynamics of nutrient concentrations in the Illinois River	3788
Limnological investigations of Texas impoundments for water quality management purposes the use of algal cultures to assess the effects of nutrient enrichment on the Highland Lakes of the Colorado River, Texas	3866
Chemical and physical findings from pollution studies on the East Gallatin River and its tributaries	3938
Effects of secondary and tertiary wastewater effluents on algal growth in a lake-river system	3968
The distribution, the phytosociological composition, and the ecology of the vascular macrophytes in the Moosach River system near Munich	3998
Water quality and plankton ecology the Christina River, Dela- ware	4057
Nutrient balances in rivers	3547
Trends in nitrate concentrations in English rivers in relation to fertilizer use	3550
RUNOFF	4077
Development of a mathematical model to predict the role of surface runoff and groundwater flow in overfertilization of surface waters	
Effects of surface runoff on the feasibility of advanced muni- cipal waste treatment	4084
SALINITY Relationships of autotrophic ammonium oxidizing bacteria to	4153
marine salts	
SCENEDESMUS Influence of medium pH and carbon dioxide on assimilation of some organic acids by Scenedesmus quadricauda	3810
SEASONAL serbon in the inshere	4195
The seasonal variation of dissolved organic carbon in the inshore waters of the Menai Strait in relation to primary production	
SEAWATER see also MARINE, OCEANOGRAPHY Oceanography of the Black Sea: inorganic nitrogen compounds	3522
A modified spectrophotometric method for the determination of	3551
ammonia (and amino acids) in natural waters, with particular reference to sea water	
Microbiological studies on nitrogen fixation in aquatic environ- ments II. On the distribution of nitrogen fixing bacteria in	
Experimental decomposition of algae in seawater and early diagene	S1S 4064

SECONDARY

Effects of secondary and tertiary wastewater effluents on algal growth in a lake-river system	3968
Secondary effects of nitrogen in water	3783
SEDIMENTS - SEDIMENTATION see also MUD	
Enteric bacterial metabolism of stream sediment eluates	3544
A quantitative method for the determination of chlorin pigments in Great Lakes sediment	3772
Aqueous phosphate and lake sediment interaction	3793
Phosphate equilibria on stream sediment and soil in a watershed draining an agricultural region	3821
Nitrogen and carbon distribution in sediment cores of selected Wisconsin lakes	3910
Chemistry of sediment in water	3952
The nitrogen cycle in sediment-water systems	3959
The chemical characterization of bottom sediments	3515
Chemistry of surface sediments of sixteen lakes in the Experimental Lakes Area, Northwestern Ontario	3517
A review of studies on the bottom sediments of lakes	3530
Chemical characterization of pond sediments	3639
Sorption of soluble phosphates by freshwater sediments in the Huron River basin, Michigan	3661
Sorption of inorganic phosphate by lake sediments	3666
Fractionation of inorganic phosphate in calcareous lake sedimen	ts 3733
The free amino acids in the sediments of Toronto Harbor	3784
Lake Kinneret: the nutrient chemistry of the sediments	3816
Changes in the chemical composition of sediments of Lake Washing 1958-1970	gton,3817
Mineralization of organic phosphorus in oligotrophic lake sedime	ents 3823
Aquatic plant communities in Lake Butte des Morts. Phase 2. Effects of higher aquatic plants, marsh water and marsh sedimon phytoplankton	3890 ents
Occurrence and distribution of phosphate solubilizing bacteria and phosphatase in marine sediments at Porto Novo	3941
Importance of denitrification and nitrate reduction in sediments to nitrogen budgets of lakes	3961
Nitrogen fixation by bacteria in Lake Mize, Florida, and in some lacustrine sediments	e 3996
The chemical investigation of recent lake sediments from Wiscons lakes and their interpretation	sin 4109

SEDIMENTS - SEDIMENTATION (Continued)	0.5.00
Bottom deposits	3789
SELENASTRUM	
Adenosine triphosphate content of Selenastrum capricornutum	3546
SESTON	0701
A rapid method for the estimation of the carbon content of seston and periphyton	3781
The daily carbon gains and losses in the seston of Queen Mary Reservoir, England, during 1968	3819
SEWAGE - SEWERAGE	2002
Phytoplankton energetics in a sewage treatment lagoon	3893
Continuous cultures of natural populations of phytoplankton in dilute, treated sewage effluent	4021
Laboratory tests for plant operation control and stream quality measurement	3635
Carbon limitation in sewage lagoons	4128
SHORES see also COASTS	0.776
Oceanography of the nearshore coastal waters of the Pacific Northwest relating to possible pollution. Volume II	3776
The seasonal variation of dissolved organic carbon in the inshore waters of the Menai Strait in relation to primary production	4195
SILICA	0616
Eutrophication, silica depletion, and predicted changes in algal quality in Lake Michigan	3646
A hypothesis concerning silica and the freshwater planktonic diatoms	3802
Phosphorus, silica, and eutrophication in Lake Michigan	4134
SOILS	
Phosphate equilibria on stream sediment and soil in a watershed draining an agricultural region	3821
Behavior of soil and fertilizer phosphorus in relation to water	3944
Influence of organic matter on some characteristics of aquatic soils	3769
SOFT WATER	
Phytoplankton photosynthesis, micronutrient interactions, and inorganic carbon availability in a soft water Vermont lake	417.
SORPTION see also UPTAKE	066
Sorption of soluble phosphates by freshwater sediments in the Huron River basin, Michigan	366
Sorption of inorganic phosphate by lake sediments	366

SOUTHEAST U.S.	
Fertility and aquatic biomass in Southeastern impoundments,	380:
SPECIES see POPULATIONS	
SPECTROPHOTOMETRY	
A modified spectrophotometric method for the determination of ammonia (and amino acids) in natural waters, with particular reference to sea water	355
STAGNATION	
Development of physico-chemical and microbiological character- istics preceding summer stagnation in a reservoir	3541
STREAMS see also RIVERS	
Enteric bacterial metabolism of stream sediment eluates	3544
Laboratory tests for plant operation control and stream quality measurement	3635
Phosphate equilibria on stream sediment and soil in a watershed draining an agricultural region	3821
The fate of the dead leaves that fall into streams	3800
Species diversity of benthic macroinvertebrates in three Michigan streams	3830
SUBSTRATES	
Blue-green algal responses to some organic nitrogen substrates	4070
SUBTROPICAL	
Phytoplankton kinetics in a subtropical estuary: Eutrophication	4019
The physiological state with respect to nitrogen of phytoplankton from low nutrient subtropical water as measured by the effect of ammonium ion on dark carbon dioxide fixation	4196
SYNTHESIS	
Relationships between production, nutrient accumulation, and chlorophyll synthesis in an <i>Eleocharis quadrangulata</i> population	3984
Kinetics of synthesis of nitrogenase in batch and continuous culture of Anabaena flos aque	4017
TERTIARY	
Effects of secondary and tertiary wastewater effluents on algal growth in a lake-river system	3968
TESTS see also ANALYSIS, ASSAYS, DETERMINATIONS, MEASUREMENTS, METHODS	
Use of tests for limiting or surplus nutrients to evaluate sources of nitrogen and phosphorus for algae and aquatic weeds	3542
Laboratory tests for plant operation control and stream quality measurement	3635
TEXAS	
Limnological investigations of Texas impoundments for water quality management purposes limnological and water quality data for the Highland Lakes, 1968	3752

TEXAS (Continued)	
Limnological investigations of Texas impoundments for water quality management purposes the use of algal cultures to assess the effects of nutrient enrichment on the Highland Lakes of the Colorado River, Texas	3866
THERMAL see also HEATED	
Thermal effects on biological production in nutrient rich ponds	4008
TIDAL	
Current water quality conditions and investigation in the upper Potomac River tidal system	3649
TOXICITY - TOXINS	
Toxicity of ammonia to marine diatoms	3698
TRACE ELEMENTS see also METALS	
Distribution of trace elements and chlorophyll $lpha$ in Lake Ontario	3770
TRIBUTARIES	
Chemical and physical findings from pollution studies on the East Gallatin River and its tributaries	3938
TRIPHOSPHATE	0.716
Adenosine triphosphate content of Selenastrum capricornutum	3546
TROPHIC	0.500
Comparison of the primary production of phytoplankton in three lakes of different trophic type	3599
Trophic state of lakes in north central Florida	3743
TROPICAL	
Lake George, Uganda. Studies on a tropical ecosystem	3751
The relative importance of nannoplankton and netplankton as primary producers in tropical oceanic and neritic phytoplankton communities	4043
Liberation of extracellular products of photosynthesis by tropical phytoplankton	405
ТҮРНА	200
Further studies on productivity, nutrient and pigment relationship in Typha latifolia populations	398
UGANDA	275
Lake George, Uganda, Studies on a tropical ecosystem	375
ULTRAVIOLET	266
Ultraviolet combustion of dissolved organic nitrogen compounds in lake waters	366
ULVA	205
Parameters affecting the growth of Ulva latissima in a polluted	385

UPTAKE 8	see also SORPTION	
	ctors affecting phosphate uptake by <i>Aerobacter aerogenes</i> in a system relating to cell numbers to ³² P uptake	3671
	trusion of carbon accompanying uptake of amino acids by marine phytoplankters	4060
Car UREA	rnivorous pathway of phosphorus uptake by Utricularia inflata	4164
	e excretion of ammonia and urea by <i>Mya arenaria</i> L. (Mollusca: Bivalvia)	3537
The	e distribution of urea in coastal and oceanic waters	3971
	ytoplankton growth and composition in shipboard cultures supplied with nitrate, ammonium, or urea as the nitrogen source	4022
UTRICULA	ARIA	
	rnivorous pathway of phosphorus uptake by <i>Utricularia inflata</i> R see MACROPHYTES, PLANTS	4164
VEGETAT	ION see also MACROPHYTES, PLANTS, WEEDS (see also specific phyllur class, order, family, etc	m,
	lationships between production, nutrient accumulation, and chlorophyll synthesis in an Eleocharis quadrangulata population	3984
WASHING"	TON	
	eliminary investigation of the low dissolved oxygen concentra- tions that exist in Long Lake located near Spokane, Washington	3518
	anges in the chemical composition of sediments of Lake Washing- ton, 1958-1970.	3817
•	gal populations in Moses Lake, Washington. Temporal and spatial distribution and relationship with environmental parameters	4178
WASTES		
On	the question of introduction of purified waste water into lakes	3790
(e local influence of continuous waste water from a point source; direct information of the growth limiting effect of phosphorus in the Lake of Lucerne	3791
	fects of surface runoff on the feasibility of advanced municipal waste treatment	4084
	me observations on the limnology of a pond receiving animal wastes	3669
	fects of secondary and tertiary wastewater effluents on algal growth in a lake-river system	3968
WATER Q	UALITY	
Wa	ter quality in relation to farm use of fertilizer	3552
	gal growth and decomposition effects on water quality, Phase II. Composition, decomposition, and nutrient regeneration of algae in batch culture	3596

3910

4109

4223

3833

WATER QUALITY (Continued) 3649 Current water quality conditions and investigation in the upper Potomac River tidal system 3658 A technical assessment of current water quality conditions and factors affecting water quality in the upper Potomac Estuary Laboratory tests for plant operation control and stream quality 3635 measurement Limnological investigations of Texas impoundments for water 3752 quality management purposes -- limnological and water quality data for the Highland Lakes, 1968 Assessment of surface water quality by a single index of pollution 3777 3787 Water quality variations in the Broadkill Estuary 3797 Rural sources of nitrates in water A water resource-water supply study of the Potomac Estuary 3799 3804 Effect of marshes on water quality Limnological investigations of Texas impoundments for water quality 3866 purposes - the use of algal cultures to assess the effects of nutrient enrichment on the Highland Lakes of the Colorado River, Texas 3899 A mathematical model of water quality in an impoundment Water quality and plankton ecology -- the Christina River, Delaware 4057 4080 Optimal estuarine water quality management (see also specific phyllum, class, order, family, etc.) WEEDS see also MACROPHYTES, PLANTS, VEGETATION Use of tests for limiting or surplus nutrients to evaluate sources of nitrogen and phosphorus for algae and aquatic weeds WISCONSIN Acetylene reduction (nitrogen fixation) in Wisconsin lakes 3813

Nitrogen and carbon distribution in sediment cores of selected

A study of the limnetic zooplankton of five flood control

The chemical investigation of recent lake sediments from Wiscon-

Wisconsin lakes

reservoirs

ZOOPLANKTON

sin lakes and their interpretation

Control of water milfoil in Wisconsin

4. Biological indices

a. Bacteria and fungi

Method for measuring mineralization in lake sediments	3523
Hypolimnetic oxygen depletion mechanism in Lake Erie	3528
Development of physico-chemical and microbiological characteristics preceding summer stagnation in a reservoir (In French with an English summary)	3541
Enteric bacterial metabolism of stream sediment eluates	3544
Adenosine triphosphate content of Selenastrum capricornutum	3546
Particulate fractions in water and the relationship to aquatic microflora	3548
The response of a specialized aquatic ecosystem, the duckweed rhizo-sphere, to selected environmental influences	3564
The ecology of saprolegniaceae in lentic and littoral muds with a general theory of fungi in the lake ecosystem	3565
Chlorinated hydrocarbon, microparticulate effects on microorganisms isolated from Lake Erie	3576
The influence of suspended microscopic substances on the metabolic activities of microorganisms responsible for biological enrichment of water	3577
Incidence of prosthecate bacteria in a polluted stream	3583
Comparative studies on metabolic activity of plankton, benthic and epiphytic bacteria	3586
Studies on morphology, nutritional requirements, biochemical activity and antibiotic resistence of heterotrophic water bacteria	3587
Microfungi in the water, mud, and litter of a cattail marsh	3589
Interactions between some tubificid oligochaetes and bacteria found in the sediments of Toronto Harbour, Ontario	3590
Bacteria, carbon dioxide, and algal blooms	3600
Procedings of the conference in the matter of pollution of the inter- state waters of Long Island Sound and its tributaries - Connecticut -New York	3626
Factors affecting phosphate uptake by Aerobacter aerogenes in a system relating cell numbers to 32P uptake	3671
Sampling and measurement in the aquatic environment	3674
Studies on freshwater bacteria: factors which influence the population and its activity	3679
Influence of Aldrin and varied oxygen concentrations on a Lake Erie heterotrophic bacterium: growth characteristics and biosynthetic patterns	3680

Photosynthetic properties and growth of photosynthetic sulfur bacteria in lakes	3689
Nitrite distribution and its regulating processes in the equatorial Pacific Ocean	3796
The fate of the dead leaves that fall into streams	3800
A review of literature on inorganic nitrogen metabolism in microor-ganisms	3809
Microbial degradation of detergent phospahtes	3822
The occurence of sewage fungus in rivers in the United Kingdom	3827
Phenotypic restoration by molybdate of nitrate reductase activity in chlD mutants of Escherichia coli	3831
Phytochemical, pharmacological, and antimicrobial screening of Minnesotan aquatic plants	3852
Primary productivity, chemo-organotrophy, and nutritional interactions of epiphytic algae and bacteria on macrophytes in the littoral of a lake	3860
Bacterial pathogens of freshwater blue-green algae	3865
The distribution and net productivity of sublittoral populations of attached macrophytic algae in an estuary on the Atlantic coast of Spain	3872
Friction reduction by algal and bacterial polymers	3876
Aquatic biology and the pulp and paper industry (Report No. 2)	3929
Changes in the chemical composition of sediments of Lake Washington, 1958-1970	3937
Plant available phosphorus status of lakes	3940
Occurence and distribution of phosphate solubilizing bacteria and phosphatase in marine sediments at Porto Novo	3941
Microbiological studies on nitrogen fixation in aquatic environmentsII. On the distribution of nitrogen fixing bacteria in sea wa- ter regions	3955
Microbiological studies on nitrogen fixation in aquatic environmentsI. On the distribution of nitrogen fixing bacteria in fresh water regions	3956
Microbiological studies on nitrogen fixation in aquatic environmentsIV. On the nitrogen fixing bacteria in culture ponds	3957
The fate of nitrogen in aquatic ecosystems	3958
The nitrogen cycle in sediment-water systems	3959
Microbiological aspects of the pollution of freshwater with inor- ganic nutrients	3960

Importance of denitrification and nitrate reduction in sediments to nitrogen budgets of lakes	396
Chemical and bacteriological studies on the Speed River system	397
Chemical changes, including nitrate reduction, in Darwin Bay, Galapagos Archipelago, over a 2-month period, 1969	397
Microbiological studies on nitrogen fixation in aquatic environmentsV. Modification of acetylene method for the measurement of in situ rate of nitrogen fixation	397
Nitrogen fixation by bacteria in Lake Mize, Florida, and in some la- custrine sediments	399
The seasonal selection by temperature of heterotrophic bacteria in an intertidal sediment	400
Algicidal nonfruiting myxobacteria with high G + C ratios	400
Are some bacteria toxic for marine algae?	401
A computer-simulation study of predator-prey relationships in a sin- gle-state continuous-culture system	407
A hydrobiological study of the polluted River Lieve (Ghent, Belgium)	410
Stream purification	411
Nutrients and eutrophication: the limiting-nutrient controversy	411
Characterization of phosphorus-limited plankton algae	412
The role of nitrogen in eutrophic processes	412
The interrelation of carbon and phosphorus in regulating heterotro- phic and autotrophic populations in an aquatic ecosystem, Shriner Pond	412
The role of phosphorus in eutrophication	4137
Nitrogen fixation in an estuarine environment: the Waccasassa on the Florida Gulf Coast	4145
Sewage fungus in rivers in the United Kingdom: the slime community and its constituent organisms	4149
The temperature dependency of biological denitrification	4150
Relationships of autotrophic ammonium-oxidizing bacteria to marine salts	4153
Bacterial microflora in Chlorella vulgaris culture	4166
Seasonal changes in antibacterial activity of North Sea water	4168
Ecological control of microbial imbalances	4169
Water pollution microbiology	4170
Microbiological studies on nitrogen fixation in aquatic environmentsVI. On the <i>in situ</i> nitrogen fixation in water regions	4172

A microbiological survey in Lake Erie near Cleveland, Ohio	4180
Fatty acids in three plankton organisms	4209
Algae (See also specific phyllum, class, subclass, order, family, etc.) ACETATE	
Some data on the role of photosynthesis in the utilization of acetate and pyruvate by Scenedesmus quadricauda	4050
ACETYLENE	
Acetylene-ethylene assay for nitrogenase activity in Keystone Reservoir, Oklahoma	3656
The relation of acetylene reduction to heterocyst frequency in blue- green algae	3696
Acetylene reduction (nitrogen fixation) in Wisconsin lakes	3813
ACID(S)	
The assimilation of nucleic acid precursors by intact cells and protoplasts of the blue-green alga Anacystis nidulans	4049
Influence of medium pH and carbon dioxide on assimilation of some organic acids by Scenedesmus quadricauda	3810
Extrusion of carbon accompanying uptake of amino acids by marine phytoplankters	4060
Acid mine pollution effects on lake biology	4114
Fatty acid composition of unicellular strains of blue-green algae	4188
Influence of nitrogen deficiency on uridine incorporation into ribo- somes in the green alga	4208
Fatty acids in three plankton organisms	4209
ADENOSINE	
Adenosine triphosphate content of Selenastrum capricornutum	3546
AEROBIC	
Aerobic decomposition of algae	3871
ALDRIN	
Growth response of blue-green algae to Aldrin, Dieldrin, Endrin, and their metabolites	4014
ALGICIDE	100
Algicidal nonfruiting myxobacteria with high G + C ratios	400
A preliminary investigation of a potential new algicide	408
Potential algicides for the control of algae	408
ALKALINE	07.6
A highly alkaline lake in Nicaragua	376
Relationship between phosphates and alkaline phosphatase of Anabae- na flos aquae in continuous culture	401

b.

ALUM	
Algal removal by alum coagulation	372
AMINO	
Extrusion of carbon accompanying uptake of amino acids by marine phytoplankters	406
AMMONIA - AMMONIUM	
Toxicity of ammonia to marine diatoms	369
Phytoplankton growth and composition in shipboard cultures supplied with nitrate, ammonium, or urea as the nitrogen source	402
The physiological state with respect to nitrogen of phytoplankton low nutrient subtropical water as measured by the effect of ammonium ion on dark carbon dioxide fixation	419
ANABAENA	
Studies on the physiology of heterocyst production in the nitrogen-fixing blue-green alga Anabaena sp. L-31 in continuous culture	306.
The effect of various nitrogen sources upon the production of extracellular polysaccharide by the blue-green alga Anabaena flos aquae A-37	389:
Relationship between phosphates and alkaline phosphatase of $\it Anabaena$ $\it flos$ $\it aquae$ in continuous culture	401(
Kinetics of synthesis of nitrogenase in batch and continuous culture of Anabaena flos aquae	4017
Studies on the Hill reaction of membrane fragments of blue-green algae. I. Stabilizing effect of various media on the 2,6-dichlorophenol indophenol - Hill activity of membrane fragments obtained from Anabaena cylindrica and Anabaena variabilis	4025
Localization of nitrogen fixation in Anabaena	4065
Toxicity of selenium to the blue-green algae, Anacystis nidulans and Anabaena varabilis	3721
Characteristics of the nitrogenase system of the blue-green alga Anabaena cylindrica	4187
Photorespiration and nitrogenase activity in the blue-green alga, Anabaena cylindrica	4191
Nitrogen fixation and heterocysts in the blue-green alga Anabaena cylindrica	4200
Investigations on photokinesis of Anabaena variabilis Kutzing	4199
ANACYSTIS	
Toxicity of selenium to the blue-green algae, Anacystis nidulans and Anabaena variabilis	37
The assimilation of nucleic acid precursors by intact cells and protoplasts of the blue-green alga Anacystis nidulans	4049

ANACYSTIS (Continued) Changes in pigment composition and photosynthesis induced by iron 4201 deficiency in the blue-green alga Anacystis nidulans 4184 The influence of culture temperature on the carotenoid composition of the blue-green alga Anacystis nidulans See also CATTLE, FARM WASTES, FEED LOTS, MANURE ANIMAL Some observations on the limnology of a pond receiving anmial wastes 3669 An experimental approach to the production dynamics and structure of 3794 freshwater animal communities ANTIBACTERIAL Seasonal changes in antibacterial activity of North Sea water 4168 ARCTIC 3954 Nutrient limiting factors in an arctic tundra pond **ARKANSAS** Seasonal cycles of net plankton in a cold tailwater and a natural 4029 stream in the State of Arkansas Environmental changes produced by cold water outlets from three 4105 Arkansas reservoirs ASSAY - BIOASSAY Acetylene-ethylene assay for nitrogenase activity in Keystone Reser-3656 voir, Oklahoma 3885 Evaluation of algal procedures -- PAAP batch test 3602 Biological assays and water quality in Minnesota Algal bioassay potential primary productivity studies of the lower 4038 St. Louis River, Minnesota Algal responses to nutrient additions in natural waters. I. Labora-4192 tory assays **ASSIMILATION** Influence of medium pH and carbon dioxide on assimilation of some or-3810 ganic acids by Scenedesmus quadricauda Diurnal rhythms in net plankton and nannoplankton assimilation ratios 3882 Dependence of nitrite assimilation in green algae on energy supplied 4032 by respiration and photosynthesis The assimilation of nucleic acid precursors by intact cells and pro-4049 toplasts of the blue-green alga Anacystis nidulans Ingestion, assimilation, survival, and reproduction by Daphnia pulex 4142 fed seven species of blue-green algae ASSOCIATIONS See also POPULATIONS Methods for determining the primary productivity of epipelic and 3597 epipsammic algal associations

1	AUTOTROPHIC	
	The interrelation of carbon and phosphorus in regulating heterotro- phic and autotrophic populations in aquatic ecosystems	380
	The interrelation of carbon and phosphorus in regulating heterotro- phic and autotrophic populations in an aquatic ecosystem, Shriner Pond	412
I	BACTERIA - BACTERIAL	
	Bacteria, carbon dioxide, and algal blooms	360.
	Primary productivity, chemo-organotrophy, and nutritional interactions of epiphytic algae and bacteria on macrophytes in the littoral of a lake	386
	Are some bacteria toxic for marine algae?	401.
	Bacterial microflora in Chlorella vulgaris culture	4160
	Bacterial pathogens of freshwater blue-green algae	386!
	Friction reduction by algal and bacterial polymers	3871
ı	BALTIC	
]	Phytoplankton primary production in the Baltic area	387!
	Nutritional ecology and community structure of the phytoplankton of Green Bay	3664
	Nitrogen cycle and primary production in mesotrophic Lake Lucerne (Horwer Bay) and in eutrophic Red Lake with special regard to nitrates as limiting factors	3668
	Species diversity and water quality in Galveston Bay, Texas	3989
	Nitrogen fixation in an estuarine environment: the Waccasassa on the Florida Gulf Coast	4145
	Bioluminescence and phytoplankton successions in Bahia Fosforescente, Puerto Rico	4056
	Comparison of phytoplankton production between natural and altered areas in West Bay, Texas	4020
1	BELGIUM	
	A hydrobiological study of the polluted River Lieve (Ghent, Belgium)	4107
1	BENTHIC-BENTHOS	
	Production of benthic microalgae in the littoral zone of a eutrophic lake	4035
	A direct method of measuring benthic primary production in streams	4186
1	BIOCHEMICAL	
	Biochemical studies on marine algaeVI. Concentration of selenium in marine algae and its importance as a trace metal for the growth of lavers	4033

BIOCHEMICAL (Continued)	
Biochemical studies on marine algaeV. Effects of trace elements on the growth and nitrogen contents of laver	4048
BIOLOGICAL - BIOLOGY	
The use of biological analyses as indicators of water quality	3562
Biological assays and water quality in Minnesota	3602
The use of biological analyses as indicators of water quality	3676
Biological productivity of the Rybinsk Reservoir	3851
Biological productivity of the main communities of the Red Lake	3862
The nuisance algae: curiosities in the biology of planktonic blue- green algae	3606
Optical remote sensing of bioresources	3760
Symposium on planktonic organisms as biological indicators of their environment (preliminary reports)	4174
Acid mine pollution effects on lake biology	4114
BIOLUMINESCENCE	
Bioluminescence and phytoplankton successions in Bahia Fosforescente, Pueto Rico	4056
BIOMASS	0000
Fertility and aquatic biomass in Southeastern impoundments	3803
BLOOMS	2600
Bacteria, carbon dioxide, and algal blooms	3600
Chlorination of odorants from algal blooms	3728
BLUE-GREEN	2605
Studies on the physiology of heterocyst production in the nitrogen- fixing blue-green alga Anabaena sp. L-31 in continuous culture	3605
The nuisance algae: curiosities in the biology of planktonic blue-	3606
The relation of acetylene reduction to heterocyst frequency in blue- green algae	3696
Tolerence of blue-green algae to pesticides	3705
Toxicity of selenium to the blue-green algae, Anacystis nidulans and Anabaena variabilis	3721
Bacterial pathogens of freshwater blue-green algae	386
Dark heterotrophic growth of an endophytic blue-green alga	386
Rlue-green algae and humic substances	387
Kinetics of the assembly of gas vacuoles in the blue-green alga Microcystis aeruginosa Kuetz. emend. Elekin	387

BLUE-GREEN (Continued)

waters	300!
The effect of various nitrogen sources upon the production of extra- cellular polysaccharide by the blue-green alga Anabaena flos aquae A-37	38 9 :
The involvement of lecithin and monogalactosyl diglyceride in lino- leate synthesis by green and blue-green algae	4011
Growth response of blue-green algae to Aldrin, Dieldrin, Endrin, and their metabolites	4014
A study of the strength and stability of gas vesicles isolated from a blue-green alga	4018
Studies on the Hill reaction of membrane fragments of blue-green algae. I Stabilizing effect of various media on the 2,6-dichlorophenol indophenol - Hill activity of membrane fragments obtained from Anabaena cylindrica and Anabaena variabilis	4025
The carotenoids of blue-green algae	4031
The effect of lysozyme on cell wall morphology in a blue-green alga, Cylindrospermum sp.	4037
Characterization of the protein from gas vacuole membranes of the blue-green alga, <i>Microcystis aeruginosa</i>	4039
Effect of wide temperature fluctuation on the blue-green algae of Bead Geyser, Yellowstone National Park	4046
The assimilation of nucleic acid precursors by intact cells and protoplasts of the blue-green alga Anacystis nidulans	4049
Blue-green algal responses to some organic nitrogen substances	4070
Pharmacological testing of blue-green algae for constituents having therapeutic value	4095
Ingestion, assimilation, survival, and reproduction by Daphnia pulex fed seven species of blue-green algae	4142
Characteristics of nitrogenase activity in broken cell preparations of the blue-green alga <i>Gloeocapsa</i> sp.LB 795	4183
The influence of culture temperature on the carotenoid composition of the blue-green alga Anacystis nidulans	4184
Characteristics of the nitrogenase system of the blue-green alga Anabaena cylindrica	4187
Fatty acid composition of unicellular strains of blue-green algae	4188
Protein composition of intact and fractionated membranes isolated from dark and light grown cells of a blue-green mutant of Rhodo-spirillum rubrum	4189
Photorespiration and nitrogenase activity in the blue-green alga, Anabaena cylindrica	4191

BLUE-GREEN (Continued)	4200
Nitrogen fixation and heterocysts in the blue-green arga Anabasia culindrica	
Changes in pigment composition and photosynthesis induced by from deficiency in the blue-green alga Anacystis nidulans	4201
Planktonic blue-green algae: growth and odor - production studies	4207
BORON	3603
Growth of $Chlorella$ in relation to boron supply BRACKISH	
Aspects of phosphorus cycling in brackish waters	4129
RDITAIN See also ENGLAND	
A key to the identification of the more common algae found in water undertakings in Britain	3592
BROWN ALGAE	4047
Translocation of photosynthate in the brown algae Nereocystis	4047
Fluorescence of chlorophyll in brown algae and diatoms	4002
CALANUS	4004
Grazing and ingestion rates of Nauplii, copepodids and adults of the marine planktonic copepod Calanus helgolandicus	7001
CALEFACTION	4059
Calefaction and phytoplankton	. 022
CALIFORNIA	3848
Organic life in the Delta-Mendota Canal, California	4034
further red tide on Clear Lake, California	4044
The relative importance of nannoplankton and netplankton as primary producers in the California current system	4044
CANADA C1 ONTARIO	3887
Delication of phytoplankton and zooplankton in Canadian Shield lakes	3604
Primary production and phytoplankton in the Experimental lakes Med, Northwestern Ontario, and other low-carbonate waters, and a liquid scintillation method for determining 14°C activity in photosynthe-	
sis Chemical factors involved in the control of phytoplankton production in the Experimental Lakes Area, Northwestern Ontario	3665
Periphyton of the Experimental Lakes Area, Northwestern Ontario	3702
	3703
Area, Northwestern Untario, using distribution	
CANAL(S)	3848
Organic life in the Delta-Mendota Canal, California	

CARBON

Bacteria, carbon dioxide, and algal blooms	3600
The effect of carbon on algal growthits relationship to eutrophication	3655
The use of radioactive carbon method in studies of trophic relation- ships of plankton	3704
A rapid method for the estimation of the carbon content of seston and periphyton	3781
A pH - carbon dioxide method for measuring aquatic primary productivity	3782
The interrelation of carbon and phosphorus in regulating heterotro- phic and autotrophic populations in aquatic ecosystems	3801
Influence of medium pH and carbon dioxide on assimilation of some organic acids by Scenedesmus quadricauda	3810
The daily carbon gains and losses in the seston of Queen Mary Reservoir, England, during 1968	3819
Levels of dissolved oxygen and carbon fixation by marine microalgae	3864
Extrusion of carbon accompanying uptake of amino acids by marine phytoplankters	4060
The flux of particulate carbon in an estuary	4119
The interrelation of carbon and phosphorus in regulating heterotro- phic and autotrophic populations in an aquatic ecosystem, Shriner Pond	4127
Carbon limitation in sewage lagoons	4128
The role of carbon in hard water marl lakes	4140
Phytoplankton photosynthesis, micronutrient interactions, and inorganic carbon availability in a soft water Vermont lake	4175
The seasonal variation of dissolved organic carbon in the inshore waters of the Menai Strait in relation to primary production	4195
Natural carbon sources, rates of replenishment, and algal growth ARBONATE	4198
Primary production and phytoplankton in the Experimental Lakes Area, Northwestern Ontario, and other low-carbonate waters, and a liquid scintillation method for determining ¹⁴ C activity in photosynthesis	3604
ARBON DIOXIDE	
Bacteria, carbon dioxide, and algal blooms	3600
A pH - carbon dioxide method for measuring aquatic primary productivity	3782
Influence of medium pH and carbon dioxide on assimilation of some organic acids by Scenedesmus quadricauda	3810

CARBON DIOXIDE (Continued)	
The physiological state with respect to nitrogen of phytoplankton from low nutrient subtropical water as measured by the effect of ammonium ion on dark carbon dioxide fixation	4196
Relationship between light carbon dioxide fixation and dark carbon dioxide fixation by marine algae	4197
CARBON-14 (14C)	0.601
Primary production and phytoplnnkton in the Experimental Lakes Area, Northwestern Ontario, and other low-carbonate waters, and a liquid scintillation method for determining ¹⁴ C activity in photosynthe- sis	3604
CAROTENOID	
The carotenoids of blue-green algae	4031
The influence of culture temperature on the carotenoid composition of the blue-green alga Anacystis nidulans	4184
CATALYTIC	2011
Catalytic mobilization of phosphate in lake water by Cyanophyta	3811
CATEGORIZATION (See also POPULATIONS, SYSTEMATICS)	2067
Numerical taxonomy: The systematic categorization of the North American genera of freshwater algae	3867
CAULERPA	3701
Constituents of the green alga Caulerpa lamourouxii	3/01
CELL(S)	251.6
Adenosine triphosphate content of Selenastrum capricornutum	3546 3605
Studies on the physiology of heterocyst production in the nitrogen- fixing blue-green algae Anabaena sp. L-31 in continuous culture	
The effect of various nitrogen sources upon the production of extracellular polysaccharide by the blue-green alga Anabaena flos aquae A-37	3891
A study of the strength and stability of gas vesicles isolated from a blue-green alga	4018
The effect of lysozyme on cell wall morphology in a blue-green alga, Cylindrospermun sp.	4037
The assimilation of nucleic acid precursors by intact cells and protoplasts of the blue-green alga Anacystis nidulans	4049
Action de la 8-azaguanine sur la Division Celulaire de <i>Chlorella</i> pyrenoidosa. I. Inhibition Selective de la Synthese de l'adn Nucleaire	4053
Liberation of extracellualr products of photosynthesis by tropical phytoplankton	4054

CELL(S) (Continued)	
The life cycle with sexual phase in the marine diatom Coscinodiscus asteromphalus. II. Surface-dependent differentiation during the vegetative cell diminution	4067
Characteristics of nitrogenase activity in broken cell preparations of the blue-green alga Gloeocapsa-sp LB 795	4183
Protein composition of intact and fractionated membranes isolated from dark and light grown cells of a blue-green mutant of Rhodo-spirillum rubrum	4189
Influence of nitrogen deficiency on uridine incorporation into ribosomes in the green alga <code>Chlorella</code>	4208
The relation of acetylene reduction to heterocyst frequency in blue- green algae	36 9 6
CHARA	
A synopsis of the genus <i>Chara</i> , series <i>Gymnobasalia</i> (subsection Will-denowia <i>RDW</i>)	4005
CHARACTERISTICS	
Limnological characteristics of north and central Florida lakes	3755
Characteristics of nitrogenase activity in broken cell preparations of the blue-green alga Gloeocapsa sp LB 795	4183
Characteristics of the nitrogenase system of the blue-green alga Ana-baena cylindrica	4187
CHARACTERIZATION	
Preliminary characterization of lakes in the Experimental Lakes Area, Northwestern Ontario, using diatom occurrences in sediments	3703
Characterization of the protein from gas-vacuole membranes of the blue-green alga, Microcystic aeruginosa	4039
Characterization of phosphorus limited plankton algae CHEMICAL(S)	4124
Effects of thermal discharges on the chemical parameters of water quality and eutrophication	3509
Chemical factors involved in the control of phytoplankton production in the Experimental Lakes Area, Northwestern Ontario	3665
Some chemical and physical properties of two toxins from the redtide organism, Gymnodinium breve	36 9 7
Effects of chemicals on aquatic life	3930
CHEMO-ORGANOTROPHY	
Primary productivity, chemo-organotrophy, and nutritional interactions of epiphytic algae and bacteria on macrophytes in the littoral of a lake	3860

	HLORELLA	
	Growth of Chlorella in relation to boron supply	3603
	Regulation of nitrate reductase in Chlorella vulgaris	3667
	The photosynthetic unit in <i>Chlorella</i> measured by repetitive short flashes	3886
	The presence of microbodies in three strains of Chlorella	4026
	Action de la 8-azaguanine sur la Division Celulaire de <i>Chlorella</i> pyrenoidosa. I. Inhibition Selective de la Synthese de l'adn Nucleaire	4053
	Proof of two distinct enhancement effects by blue light on oxygen uptake in Chlorella	4055
	Light induced inhibition of respiration of DCMU-poisoned <i>Chlorella</i> caused by photosystem I activity	4204
	Influence of nitrogen deficiency on uridine incorporation into ribosomes in the green alga Chlorella	4208
	Studies on effects of certain quinones. II. Photosynthetic incorporation of ¹⁴ Carbon dioxide by <i>Chlorella</i>	4210
	Bacterial microflora in Chlorella vulgaris culture	4166
ı	CHLORINITY - CHLORINATION	2722
	Chlorination of odorants from algal blooms	3728
	CHLOROPHYLL	1000
	Fluorescence of chlorophyll in brown algae and diatoms	4062
	A note on the occurrence of chlorophyllase in marine algae	4013
	CHI OROPI AST	/177
	Uptake and metabolism of 2,2-bis-(p-chlorophenyl)-1,1,1-trichloro- ethane (DDT) by marine phytoplankton and its effects on growth and chloroplast electron transport	4177
	CHONDRUS	4045
	Ecological studies on economic red algae. I. Photosynthesis and respiration of <i>Chondrus crispus</i> (Stackhouse) and <i>Gigartina stellata</i> (Stackhouse) batters	4040
	CIRCADIAN	4193
	No desynchronization among four circadian rhythms in the unicellular alga, Gonyaulax polyedra	417.
	CI ADOPHORA	387
	Ecology of Cladophora fracta and Cladophora glomerata	367
	COAGULATION	372
	Algal removal by alum coagulation	312

CON212 See also 2HOKE2	
Remote sensing of coastal environments using multispectral photographic techniques	3766
Oceanography of the nearshore coastal waters of the Pacific Northwest relating to possible pollution. Volume II	3776
Phytoplankton primary production in some Finnish coastal areas in relation to pollution	3863
Phytoplankton primary production off the coast of Helsinki	3880
The distribution of urea in coastal and oceanic waters	3971
The relative importance of nannoplankton and netplankton as primary producers in tropical oceanic and neritic phytoplankton communities	4043
Nitrogen fixation in an estuarine environment: The Waccasassa on the Florida Gulf Coast	4145
The seasonal variation of dissolved organic carbon in the inshore waters of the Menai Strait in relation to primary production	4195
Algae of the littoral of west coast of Sakhalin	4205
Possible effects of organochlorine pesticides on primary producti- vity and skeletogenesis of New England estuarine and coastal marine algae	4206
COEFFICIENTS	
Phytoplankton coefficients as a method of defining the degree to which water habitats are trophic	3700
CONTAMINANTS See also POLLUTION A case study of microorganic contaminants in river water	3591
CONTROL	
Chemical factors involved in the control of phytoplankton production in the Experimental Lakes Area, Northwestern Ontario	3665
Some ecological effects on the use of Paraquat for the control of weeds in small lakes	3722
ABCs of cultural eutrophication and its control. Part I. Cultural changes	3746
Potential algicides for the control of algae	4087
A kinetic model of phytoplankton growth, and its use in algal control by reservoir mixing	4092
Ecological control of microbial imbalances	4169
Pollution controlled changes in algal and protozoan communities	4179
COPEPODS	
Grazing and ingestion rates of nauplii, copepodids and adults of the	4004

COSCINODISCUS

The life cycle with sexual phase in the marine diatom Coscinodiscus asteromphalus. I. Culture and synchronization of developmental stages	4066
The life cycle with sexual phase in the marine diatom Coscinodiscus asteromphalus. II. Surface-dependent differentiation during the vegetative cell diminution	4067
The life cycle with sexual phase in the marine diatom Coscinodiscus asteromphalus. III. Differentiation and spermatogenesis	4068
ULTURE(S)	3596
Algal growthand decomposition effects on water quality. Phase II. Composition, decomposition, and nutrient regeneration of algae in batch culture	3390
Studies on the physiology of heterocyst production in the nitrogen-fixing blue-green alga Anabaena sp.L-31 in continuous culture	3605
Limnological investigations of Texas impoundments for water quality management purposes—the use of algal cultures to assess the effects of nutrient enrichment on the Highland Lakes of the Colorado River, Texas	3866
Relationship between phosphates and alkaline phosphatase of Anabaena flos aquae in continuous culture	4016
Kinetics of synthesis of nitrognease in batch and continuous culture of Anabaena flos aquae	4017
Continuous cultures of natural populations of phytoplankton in di- lute, treated sewage effluent	4021
Phytoplankton growth and composition in shipboard cultures supplied with nitrate, ammonium, or urea as the nitrogen source	4022
The importance of algal cultures for the assessment of the eutrophication of the Oslofjord	4058
The life cycle with sexual phase in the marine diatom Coscinodiscus asteromphalus. I. Culture and syncronization of developmental stages	4066
Productivity and solar energy conversion in reedswamp stands in com- parison with outdoor mass cultures of algae in the temperate cli- mate of central Europe	4151
Bacterial microflora in Chlorella vulgaris culture	4166
The influence of culture temperature on the carotenoid composition of the blue-green alga Anacystis nidulans	4184
CYANOPHYTA See also BLUE-GREEN	0077
Catalytic mobilization of phosphate in lake water by Cyanophyta	3811

CYCLE -	CYCLING						
Algal	growth an	d decomposition	effects	on	water	quality.	

Algal growth and decomposition effects on water quality. Phase II. Composition, decomposition, and nutrient regeneration of algae in batch culture	3596
Nitrogen cycle and primary production in mesotrophic Lake Lucerne (Horwer Bay) and in eutrophic Red Lake with special regard to nitrates as limiting factors	3668
An artificial alteration of the seasonal cycle of the plankton diatom Melosira italica subsp. subarctica in an English lake	3881
The nitrogen cycle in sediment-water systems	3959
Seasonal cycles of net plankton in a cold tailwater and a natural stream in the State of Arkansas	4029
The life cycle with sexual phase in the marine diatom Coscinodiscus asteromphalus. I. Culture and synchronization of developing stages	4060
The life cycle with sexual phase in the marine diatom Coscinodiscus asteromphalus. II. Surface-dependent differentiation during the vegetative cell diminution	4067
The life cycle with sexual phase in the marine diatom Coscinodiscus asteromphalus. III. Differentiation and spermatogenesis	4068
Aspects of phosphorus cycling in brackish waters	412
CYLINDROSPERMUN	
The effect of lysozyme on cell wall morphology in a blue-green alga, Cylindrospermun sp.	403
DAPHNIA	
Ingestion, assimilation, survival, and reproduction by Daphnia pulex fed seven species of blue-green algae	414
DARK	
Dark heterotrophic growth of an endophytic blue-green alga	386
Protein composition of intact and fractionated membranes isolated from dark and light grown cells of a blue-green mutant of Rhodo-spirillum rubrum	418
The physiological state with respect to nitrogen of phytoplankton from low-nutrient subtropical water as measured by the effect of ammonium ion on dark carbon dioxide fixation	419
Relationship between light carbon dioxide fixation and dark carbon dioxide fixation by marine algae	419
DCMU-POISONED	
Light-induced inhibition of respiration in DCMU-poisoned Chlorella caused by photosystem I activity	420

4041 4062

DDT	
DDT uptake and growth of Euglena gracilis	3595
Uptake and metabolism of 2,2-bis-(p -chloropheny1)-1,1,1-trichoro-ethane (DDT) by marine phytoplankton and its effects on growth and chloroplast electron transport	4177
DECOMPOSITION - DEGRADATION	
Algal growth and decomposition effects on water quality. Phase II. Composition, decomposition, and nutrient regeneration of algae in batch culture	3596
Aerobic decomposition of algae	3871
Experimental decomposition of algae in seawater and early diagenesis	4064
DELAWARE	
Water quality and plankton ecologythe Christina River, Delaware	4057
DELTA	
Organic life in the Delta-Mendota Canal, California	3848
Plankton population structure in the lower Coeur d'Alene River, Del- ta, and Lake	
DENSITY	
Optical density profiles as an aid to the study of microstratified phytoplankton populations in lakes	4012
DETERGENTS	
Eutrophication of lake water microcosms: Phosphate versus nonphos- phate detergents	3808
DIAGENESIS	
Experimental decomposition of algae in seawater and early diagenesis	406
DIAPTOMUS	0.00
Energetics and population dynamics of Diaptomus gracilis	399
DIATOMS	260
Toxicity of ammonia to marine diatoms	369
Preliminary characterization of lakes in the Experimental Lakes Area, Northwestern Ontario, using diatom occurrences in sediments	370
Paleolimnology of Lake Texcoco, Mexico. Evidence from diatoms	374
A hypothesis concerning silica and the freshwater planktonic diatoms	380
An artificial alteration of the seasonal cycle of the plankton diatom Melosira italica subsp. subarctica in an English lake	388

Physio-morphological effects of abrupt thermal stress on diatoms

Fluorescence of chlorophyll in brown algae and diatoms

DIATOMS (Continued)	
The life cycle with sexual phase in the marine diatom Coscinodiscus asteromphalus. I. Culture and synchronization of developmental stages	4066
The life cycle with sexual phase in the marine diatom Coscinodiscus asteromphalus. II. Surface-dependent differentiation during the vegetative cell diminution	4067
The life cycle with sexual phase in the marine diatom Coscinodiscus asteromphalus. III. Differentiation and spermatogenesis	4068
DIELDRIN	
Growth response of blue-green algae to Aldrin, Dieldrin, Endrin, and their metabolites	4014
DILUTION	
Continuous cultures of natural populations of phytoplankton in di- lute, treated sewage effluent	4021
Effects of low nutrient dilution water and mixing on the growth of nuisance algae	4216
DISTRIBUTION (for biological - see POPULATIONS)	
DIURNAL	
Diurnal rhythms of netplankton and nannoplankton assimilation ratios	3882
An automated system for multiple recordings of diurnal pH	4069
The daily carbon gains and losses in the seston of Queen Mary Reservoir, England, during 1968	3819
DIVERSITY (for biological - see POPULATIONS)	
DYNAMICS	
An experimental approach to the production dynamics and structure of freshwater animal communities	3794
Energetics and population dynamics of Diaptomus gracilis ECONOMIC(S)	3997
Economic aspects of algae	4224
EFFLUENTS	
Effects of secondary and tertiary wastewater effluents on algal growth in a lake-river system	3968
Continuous cultures of natural populations of phytoplankton in di- lute, treated sewage effluent	4021
Phosphorus in wastewater effluents and algal growth	4136
ENDOPHYTIC	
Dark heterotrophic growth of an endophytic blue-green alga	3869

ENDRIN	
Growth response of blue-green algae to Aldrin, Dieldrin, Endrin, and their metabolites	4014
ENERGETICS	
Phytoplankton energetics in a sewage-treatment lagoon	3893
Energetics and population dynamics of Diaptomus gracilis	3997
ENERGY	4.000
Dependence of nitrite assimilation in green algae on energy supplied by respiration and photosynthesis	4032
Productivity and solar energy conversion in reedswamp stands in com- parison with outdoor mass cultures of algae in the temperate cli- mate of central Europe	4151
ENGLAND See also BRITAIN	2010
The daily carbon gains and losses in the seston of Queen Mary Reservoir, England, during 1968	3819
An artificial alteration of the seasonal cycle of the plankton dia- tom <i>Melosira italica</i> subsp. subarctica in an English lake	3881
ENRICHMENT	2066
Limnological investigations of Texas impoundments for water quality management purposes—the use of algal cultures to assess the effects of nutrient enrichment on the Highland Lakes of the Colorado River, Texas	3866
ENZYME(S)	
De novo synthesis of polyglucans by a phosphorylase isoenzyme in algae	4024
EPIPELIC	
Methods for determining the primary productivity of epipelic and epipsammic algal associations	3597
Standing crops and primary productivity of the epipelon of two small ponds in North Somerset, U.K.	3598
Primary production and standing crops of epipsammic and epipelic algae	3695
EPIPHYTIC	
Primary productivity, chemo-organotrophy, and nutritional interactions of epiphytic algae and bacteria on macrophytes in the littoral of a lake	3860
EPIPSAMMIC	0.503
Methods for determining the primary productivity of epipelic and epipsammic algal associations	3597
Primary production and standing crops of epipsammic and epipelic algae	369

ESTIMATION See also ASSESSMENT, DETERMINATIONS, MEASUREMENTS, METHODS,	TEST!
A rapid method for the estimation of the carbon content of seston and periphyton	3781
Estimating eutrophic potential of pollutants	4194
ESTUARINE - ESTUARY	
Nutrient management in the Potomac Estuary	3545
A technical assessment of current water quality conditions and factors affecting water quality in the upper Potomac Estuary	3658
Phytoplankton kinetics in a subtropical estuary. Eutrophication	4019
The flux of particulate carbon in an estuary	4119
Nutrient flux in estuaries	4132
Possible effects of organochlorine pesticides on primary productivity and skeletogenesis of New England estuarine and coastal marine algae	4206
Nutrient management in the Potomac Estuary	4229
Nitrogen fixation in an estuarine environment: The Waccasassa on the Florida Gulf Coast	4145
ETHYLENE	
Acetylene-ethylene assay for nitrogenase activity in Keystone Reservoir, Oklahoma	3656
EUDORINA	
Ultraviolet radiation studies on the colonial alga, Eudorina elegans	4040
EUGLENA	
DDT uptake and growth of Euglena gracilis	3595
EUROPE	
Productivity and solar energy conversion in reed swamp stands in com- parison with outdoor mass cultures of algae in the temperate cli- mate of Central Europe	4151
EUTROPHICATION	
Effects of thermal discharges on the chemical parameters of water quality and eutrophication	3509
The role of inorganic ions in the eutrophication of farm ponds	3549
Role of phosphorus in eutrophication	3553
Eutrophication in relation to water supplies	3607
Lake eutrophication: A laboratory investigation	3651
The effect of carbon on algal growthits relationship to eutrophica-tion	3655
Nitrogen cycle and primary production in mesotrophic Lake Lucerne (Horwer Bay) and in eutrophic Red Lake with special regard to nitrates as limiting factors	3668

JTROPHICATION (Continued)	0745
Implications of microbial polymer synthesis in waste treatment and lake eutrophication	3715
ABCs of cultural eutrophication and its control. Part I. Cultural changes	3746
Eutrophication of lake water microcosms: phosphate versus nonphosphate detergents	3808
Phytoplankton kinetics in a subtropical estuary. Eutrophication	4019
Production of benthic microalgae in the littoral zone of a eutrophic lake	4035
Electronic particle sizing as a means of measuring production in a eutrophic lake	4052
The importance of algal cultures for the assessment of the eutrophication of the Oslofjord	4058
Nutrients and eutrophication: the limiting nutrient controversy	4117
The role of nitrogen in eutrophic processes	4125
Eutrophication of surface watersLake Tahoe pilot pond and field studies	4130
Phosphorus, silica, and eutrophication of Lake Michigan	4134
The role of phosphorus in eutrophication	4137
Estimating eutrophic potential of pollutants	4194
EXCITERS	
Algal growth exciters	3874
EXTRACELLULAR	
The effect of various nitrogen sources upon the production of extracellular polysaccharide by the blue-green alga Anabaena flos aquae	
Liberation of extracellular products of photosynthesis by tropical phytoplankton	4054
FERTILITY - FERTILIZATION See also AGRICULTURE	
Fortility and aquatic biomass in Southeastern impoundments	3803
The fertilization of Great Central Lake. I. Effect on primary prodution	ic- 4202
FIXATION	381
Acetylene reduction (nitrogen fixation) in Wisconsin lakes	
Levels of dissolved oxygen and carbon fixation by marine microalgae	.402
Nitrogen fixation Lake Erken	406
Localization of nitrogen fixation in Anabaena	
Studies on the physiology of heterocyst production in the nitrogen- fixing blue-green alga Anabaena sp.L-31 in continuous culture	300

E١

FIXATION (Continued)	
Nitrogen fixation in an estuarine environment: The Waccasassa on the Florida Gulf Coast	4145
The physiological state with respect to nitrogen of phytoplankton from low nutrient subtropical water as measured by the effect of ammonium ion on dark carbon dioxide fixation	4196
Relationship between light carbon dioxide fixation and dark carbon dioxide fixation by marine algae	4197
Nitrogen fixation and heterocysts in the blue-green alga Anabaena cylindrica	4200
FJORD	
The importance of algal cultures for the assessment of the eutrophication of the Oslofjord	4058
FLORIDA	
Limnological characteristics of north and central Florida lakes	3755
Nitrogen fixation in an estuarine environment: the Waccasassa on the Florida Gulf Coast	4145
FLUORESCENCE	
Laser induced fluorescence in rhodamine B and algae	3868
Fluorescence of chlorophyll in brown algae and diatoms	4062
FOOD See also NUTRITION	
Food quality and zooplankton nutrition	4007
Ingestion, assimilation, survival, and reproduction by Daphnia pulex fed seven species of blue-green algae	4142
FRESHWATER See also LIMNOLOGY	
Sorption of soluble phosphates by freshwater sediments in the Huron River Basin, Michigan	3661
Observations of freshwater ponds on Carroll Island and Gunpowder Neck, Maryland, with emphasis on the zooplankton	3756
An experimental approach to the production dynamics and structure of freshwater animal communities	3794
A hypothesis concerning silica and the freshwater planktonic diatoms	3802
Bacterial pathogens of freshwater blue-green algae	3865
Numerical taxonomy: the systematic categorization of the North American genera of freshwater algae	3867
Microbiological aspects of the pollution of fresh water with inorganic nutrients	3960
Productivity problems of freshwaters	3875
A freshwater red tide on Clear Lake California	4034

FRICTION 3876 Friction reduction by algal and bacterial polymers GAS 3878 Kinetics of the assembly of gas vacuoles in the blue-green alga Microsystis aeruginosa Kuetz. emend. Elekin A study of the strength and stability of gas vesicles isolated from 4018 a blue-green alga 4039 Characterization of the protein from gas vacuole membranes of the blue-green alga, Microcystis aeruginosa GEYSER(S) Effect of wide temperature fluctuation on the blue-green algae of 4046 Bead Geyser, Yellowstone National Park GIGARTINA Ecological studies of economic red algae. I. Photosynthesis and 4045 respiration of Chondrus crispus (Stackhouse) and Gigartina stellata(Stackhouse) batters GIBBERELLIN 4036 Studies on the regulation of algal growth by gibberellin GLOFOCAPSA Characteristics of nitrogenase activity in broken cell preparations 4183 of the blue-green alga Gloeocapsa sp. LB 795 GRAZING Grazing and ingestion rate of nauplii, copepodids and adults of the 4004 marine planktonic copepod Calanus helgolandicus GREEN ALGAE 3701 Constituents of the green alga Caulerpa lamourouxii Growth inhibitors produced by the green algae (Volvocaceae) 3718 The involvement of lecithin and monogalactosyl diglyceride in lino-4011 leate synthesis by green and blue-green algae Dependence of nitrite assimilation in green algae on energy supplied 4032 by respiration and photosynthesis 4208 Influence of nitrogen deficiency on uridine incorporation into ribosomes in the green alga Chlorella GROWTH 3595 DDT uptake and growth of Euglena gracilis Algal growth and decomposition effects on water quality. Phase II. 3596 Composition, decomposition, and nutrient regeneration of algae in batch culture 3603 Growth of Chlorella in relation to boron supply

GROWTH (Continued)

The effect of carbon on algal growthits relationship to eutrophication	3655
Algal growth assessment in natural waters	3706
Growth inhibitors produced by the green algae (Volvocaceae)	3718
Dark heterotrophic growth of an endophytic blue-green alga	3869
Algal growth exciters	3874
A model of nutrient-limited phytoplankton growth	3947
A review of the factors limiting the growth of nuisance algae	3966
Effects of secondary and tertiary wastewater effluents on algal growth in a lake-river system	3968
Growth response of blue-green algae to Aldrin, Dieldrin, Endrin, and their metabolites	4014
Phytoplankton growth and composition in shipboard cultures supplied with nitrate, ammonium, or urea as the nitrogen source	4022
Biochemical studies on marine algaeVI. Concentrations of selenium in marine algae and its importance as a trace metal for the growth of lavers	4033
Studies on the regulation of algal growth by gibberellin	4036
Biochemical studies on marine algaeV. Effects of trace elements on the growth and nitrogen contents of laver	4048
Blue-green algal responses to some organic-nitrogen substrates	4070
A kinetic model of phytoplankton growth, and its use in algal control by reservoir mixing	4092
Phosphorus in wastewater effluents and algal growth	4136
Uptake and metabolism of 2,2-bis-(p-chlorophenyl)-1,1,1-trichloro- ethane (DDT) by marine phytoplankton and its effects on growth and chloroplast electron transport	4177
Effect of mercury on algal growth rates	4185
Natural carbon sources, rates of replenishment, and algal growth	4198
Planktonic blue-green algae: growth and odor-production studies	4207
Effects of low nutrient dilution water and mixing on the growth of nuisance algae	4216
YMNOBASALIA	
A synopsis of the genus Chara, series Gynobasalia (subsection Will-denowia RDW)	4005
YMNODINIUM	
Some chemical and physical properties of two toxins from the red-tide organism, Gummodinium breve	3697

HABITATS	700
Phytoplankton coefficients as a method of defining the degree to 37 which water habitats are trophic	700
HARD WATER	1.60
The role of carbon in hard water marl lakes	140
HEATED See also THERMAL	(00
Primary and secondary production on a lake heated by thermal power 3 plant	699
HELSINKI See also FINLAND	000
Phytoplankton primary production off the coast of Helsinki HETEROCYSTS	880
Studies on the physiology of heterocyst production in the nitrogen- 3 fixing blue-green alga Anabaena sp. L-31 in continuous culture	605
The relation of acetylene reduction to heterocyst frequency in blue-	1696
Nitrogen fixation and heterocysts in the blue-green alga Anabaena cylindrica	1200
HETEROTROPHIC	2001
The interrelation of carbon and phosphorus in regulating heterotrophic 3 and autotrophic populations in aquatic ecosystems	
Dark beterotrophic growth of an endophytic blue-green alga	3869
The interrelation of carbon and phosphorus in regulating heterotrophic and autotrophic populations in an aquatic ecosystem, Shriner Pond	412/
UTIL DEACTION	4025
Studies on the Hill reaction of membrane fragments of blue-green algae. I. Stabilizing effect of various media on the 2.6-dichlorophenol indophenol-Hill activity of membrane fragment obtained from Anabaena cylindrica and Anabaena variabilis	4023
HUMIC	3877
Blue-green algae and humic substances	307.
HYDROBIOLOGY COLUMN Religion	4107
A hydrobiological study of the polluted River Lieve (Ghent, Belgium)	110,
HYDROGEN ION CONCENTRATION See pH	
IDENTIFICATION (See also SYSTEMATICS)	3592
A key to the identification of the more common algae found in water undertakings in Britain	337
IMPOUNDMENTS See also LAKES, RESERVOIRS	3752
Limnological investigations of Texas impoundments for water quality management purposeslimnological and water quality data for the Highland Lakes, 1968	3, 34

IMPOUNDMENTS (Continued)	
Fertility and aquatic biomass in Southeastern impoundments	3803
Limnological investigations of Texas impoundments for water quality management purposesthe use of algal cultures to assess the effects of nutrient enrichment on the Highland Lakes of the Colorado River, Texas	3866
A mathematical model of water quality in an impoundment	3899
INDICATORS	
The use of biological analyses as indicators of water quality	3562
The use of biological analyses as indicators of water quality	3676
Plankton as indicators of pollution in New York waters,	4027
Symposium on planktonic organisms as biological indicators of their environment (preliminary reports)	4174
INHIBITION - INHIBITORS	
Growth inhibitors produced by the green algae (Volvocaceae)	3718
Action de la 8-azaguanine sur la Division Celulaire de <i>Chlorella pyre-noidosa</i> . I. Inhibition Selective de la Synthese de l'adn Nucleaire	4053
Light induced inhibition of respiration in DCMU-poisoned <i>Chlorella</i> caused by photosystem I activity	4204
INORGANIC	
The role of inorganic ions in the eutrophication of farm ponds	3549
Microbiological aspects of the pollution of fresh water with inorganic nutrients	3960
Phytoplankton photosynthesis, micronutrient interactions, and inorganic carbon availability in a soft water Vermont Lake	4175
IONS	
Ion transport studies on phytoplankton of a fish pond at Ile-ile	3953
The role of inorganic ions in the eutrophication of farm ponds	3549
The physiological state with respect to nitrogen of phytoplankton from low nutrient subtropical water as measured by the effect of ammonium ion on dark carbon dioxide fixation	4196
IRON	
Available iron: a limiting factor for marine phytoplantkon	4042
Changes in pigment composition and photosynthesis induced by iron deficiency in the blue-green alga	4201
ISLAND(S)	
Observations of freshwater ponds on Carroll Island and Gunpowder Neck, Maryland, with emphasis on the zooplankton	3756

KINETICS

	Kinetics of the assembly of gas vacuoles in the blue-green alga	3878
	Microcystis aeruginosa Kuetz.emend.Elekin	4017
	Kinetics of synthesis of nitrogenase in batch continuous culture of Anabaena flos aquae	
	Phytoplankton kinetics in a subtropical estuary. Eutrophication	4019
	A kinetic model of phytoplankton growth, and its use in algal control by reservoir mixing	4092
_/	AGOONS CONTRACTOR OF THE PROPERTY OF THE PROPE	
	Phytoplankton energetics in a sewage-treatment lagoon	3893
	Carbon limitation in sewage lagoons	4128
L	AKES	
	Effects of zooplankton on algae in Westhampton Lake	3561
	The periphyton of the submerged macrophytes of Mikolajskie Lake	3593
	Comparison of the primary production of phytoplankton in three lakes of different trophic type	3599
	Primary production and phytoplankton in the Experimental Lakes Area, Northwestern Ontario, and other low carbonate waters, and a liquid scintillation method for determining ¹⁴ C activity in photosynthesis	3604
	The diversity of pigments in lake sediments and its ecological significance	3645
	Lake eutrophication: a laboratory investigation	3651
	Chemical factors involved in the control of phytoplankton production in the Experimental Lakes Area, Northwestern Ontario	3665
	Nitrogen cycle and primary production in mesotrophic Lake Lucerne (Horwer Bay) and in eutrophic Red Lake with special regard to ni-	3668
	The primary productivity and limiting nutrients of Little Brooklyn La	ke 3670
	The phytoplankton of Minnesota lakesa preliminary survey	3694
	Primary and secondary production in a lake heated by thermal power	3699
	Periphyton of the Experimental Lakes Area, Northwestern Ontario	3702
	Preliminary characterization of lakes in the Experimental Lakes Area, Northwestern Ontario, using diatom occurrences in sediments	
	Implications of microbial polymer synthesis in waste treatment and lake eutrophication	3715
	Some ecological effects on the use of Paraquat for the control of weeds in small lakes	3722

LAKES (Continued)

Paleolimnology of Lake Texcoco, Mexico, evidence from diatoms	3749
Lake George, Uganda. Studies on a tropical ecosystem	3751
Limnological investigations of Texas impoundments for water quality management purposeslimnological and water quality data for the Highland Lakes, 1968	3752
Onondaga Lake study	3754
Limnological characteristics of north and central Florida lakes	3755
A highly alkaline lake in Nicaragua	3767
Studies on Lake Tjeukemeer	3792
Eutrophication of lake water microcosms. Phosphate versus nonphosphate detergents	3808
Catalytic mobilization of phosphate in lake water by Cyanophyta	3811
Acetylene reduction (nitrogen fixation) in Wisconsin lakes	3813
Survey of phytoplankton productivity and nutrients in Lake Michigan and Lake Superior	3815
Productivity studies at Loch Leven (a shallow nutrient rich lowland lake)	3842
Primary productivity, chemo-organotrophy, and nutritional interactions of epiphytic algae and bacteria on macrophytes in the littoral of a lake	3860
Biological productivity of the main communities of the Red Lake	3862
Limnological investigations of Texas impoundments for water quality management purposes—the use of algal cultures to assess the effects of nutrient enrichment on the Highland Lakes of the Colorado River, Texas	3866
Production of several Mazurian lakes	3873
An artificial alteration of the seasonal cycle of the plankton diatom Melosira italica subsp. subarctica in an English lake	3881
Plankton population structure in the lower Coeur d'Alene River, delta, and lake	3884
Production of phytoplankton and zooplankton in Canadian Shield lakes	3887
Aquatic plant communities in Lake Butte des Morts. Phase 2. Effects of higher aquatic plants, marsh water and marsh sediments on phytoplankton	3890
Plankton productivity studies in Lake St. Clair	3895
Plant available phosphorus status of lakes	3940
Limiting nutrient elements in filtered Lake Erie water	3963
Effects of secondary and tertiary wastewater effluents on algal growth in a lake-river system	3968

LAKES (Continued)

(NES (CONTINUES)	4012
Optical density profiles as an aid to the study of microstratified phytoplankton populations in lakes	4012
Nitrogen fixation in Lake Erken	
Oscillaxanthin in the sediment of Lake Washington	4030
A freshwater red tide on Clear Lake, California	4034
Production of benthic microalgae in the littoral zone of a eutrophic lake	4035
Electronic particle sizing as a means of measuring production in a eutrophic lake	4052
Acid mine pollution effects on lake biology	4130
Eutrophication of surface watersLake Tahoe: pilot pond and field studies	
Interactions of dissolved and particulate nitrogen in lake metabolism	4131
Phosphorus, silica, and eutrophication of Lake Michigan	4134
The role of carbon in hard water marl lakes	4140
Phytoplankton photosynthesis, micronutrient interactions, and inor- ganic carbon availability in a soft water Vermont lake	4175
Plankton in Lake Lilla Ullevifjarden, eastern Sweden	4176
Algal populations in Moses Lake, Washingtontemporal and spatial distribution relationship with environmental parameters	4178
A microbiological survey in Lake Erie near Cleveland, Ohio	4180
Nutrients and phytoplankton in Lake Washington	4181
Biochemical studies on marine algaeVI. Concentrations of selenium in marine algae and its importance as a trace metal for the growth of layers	4033
Biochemical studies on marine algaeV. Effects of trace elements on the growth and nitrogen contents of lavers	4048
LECITHIN 11.1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	4011
The involvement of lecithin and monogalactosyl diglyceride in lino- leate synthesis by green and blue-green algae	
LIGHT	3894
The nature of the photosynthate in natural phytoplankton populations in relation to light quality	4055
Proof of two distinct enhancement effects by blue light on oxygen	4189
Protein composition of intact and fractionated membranes isolated from dark and light grown cell of a blue-green mutant of Rhodo-spirillum rubrum	4109

LIGHT (Continued)	
Relationship between light carbon dioxide fixation and dark a carbon dioxide fixation by marine algae	4197
Light induced inhibition of respiration in DCMU-poisoned ${\it Chlorella}$ by photosystem I activity	4204
LIMITING	
A model of nutrient-limited phytoplankton growth	3947
Use of tests for limiting or surplus nutrients to evaluate sources of nitrogen and phosphorus for algae and aquatic weeds	3542
Nitrogen cycle and primary production in mesotrophic Lake Lucerne (Horwer Bay) and in eutrophic Red Lake with special regard to nitrates as limiting factors	3668
The primary productivity and limiting nutrients of Little Brooklyn Lake	3670
Nutrient limiting factors in an arctic tundra pond	3954
Limiting nutrient elements in filtered Lake Erie water	3963
A review of the factors limiting the growth of nuisance algae	3966
Available iron: a limiting factor for marine phytoplankton	4042
Carbon limitation in sewage lagoons	4128
The role of minor nutrients in limiting the productivity of aquatic ecosystems	4126
Nutrients and eutrophication: The limiting nutrient controversy	4117
LIMNOLOGY see also FRESHWATER	
Limnological investigations of Texas impoundments for water quality mana ement purposes limnological and water quality data for the Highland Lakes, 1968	3752
Limnological characteristics of north and central Florida lakes	3755
Limnological investigations of Texas impoundments for water quality management purposes the use of algal cultures to assess the effects of nutrient enrichment on the Highland Lakes of the Colorado River, Texas	3866
Some observations on the limnology of a pond receiving animal wastes	366
Paleolimnology of Lake Texcoco, Mexico; evidence from diatoms	3749
LINOLEATE	
The involvement of lecithin and monogalactosyl diglyceride in linoleate synthesis by green and blue-green algae	4011
LITTORAL	
Primary productivity, chemo-organotrophy, and nutritional interact- ions of epiphytic algae and bacteria on macrophytes in the littoral of a lake	3860
Production of benthic microalgae in the littoral zone of a eutro- phic lake	4035

LITTORAL (Continued)	
Algae of the littoral of west coast of Sakhalin	4205
LYSOZYME	/ 0.27
The effect of lysozyme on cell wall morphology in a blue green	4037
alga, Cylindrospermun sp. (see also specific phyllum MACROPHYTES see also PLANTS, VEGETATION, WEEDS class, order, family, etc.)
The periphyton of the submerged macrophytes of Mikolajskie Lake	3373
Primary productivity, chemo-organotrophy, and nutritional inter- actions of epiphytic algae and bacteria on macrophytes in the littoral of a lake	3860
MANAGEMENT	25/5
Nutrient management in the Potomac Estuary	3545
Limnological investigations of Texas impoundments for water quality management purposes limnological and water quality data for the Highland Lakes, 1968	3752
Limnological investigations of Texas impoundments for water quality management purposes the use of algal cultures to assess the effects of nutrient enrichment on the Highland Lakes of the Colorado River, Texas	3866
MARINE see also OCEANOGRAPHY, SEA WATER	2600
Toxicity of ammonia to marine diatoms	3698
Levels of dissolved oxygen and carbon fixation by marine micro-	3864
Grazing and ingestion rates of nauplii, copepodids and adults of the marine planktonic copepod Calanus helgolandicus	4004
A note on the occurence of chlorophyllase in marine algae	4013
And some besteria toxic for marine algae?	4015
Biochemical studies on marine algae VI. Concentration of selent in marine algae and its importance as a trace metal for the grown of layers	
:lable iron: A limiting factor for marine phytoplankton	4042
Biochemical studies on marine algae V. Effects of trace element	
Extrusion of carbon accompanying uptake of amino acids by marine	4060
Development of toxicity test procedures for marine phytoplankton	4061
Release of dissolved organic matter from natural populations of	4063
The life cycle with sexual phase in the marine diatom Coscinodisco asteromphalus. I. Culture and synchronization of developmental	
The life cycle with sexual phase in the marine diatom Coscinodiscon asteromphalus. II. Surface-dependent differentiation during the vegetative cell diminution	is 4067 e

MARINE (Continued)

	The life cycle with sexual phase in the marine diatom Coscino- discus asteromphalus. III. Differentiation and spermatogenesis	4068
	The seasonal variation of dissolved organic carbon in the inshore waters of the Menai Strait in relation to primary production	4195
	Uptake and metabolism of 2,2-bis- $(p$ -chlorophenyl)-1,1,1-trichloro-ethane (DDT) by marine phytoplankton and its effects on growth and chloroplast electron transport	4177
	Relationship between light carbon dioxide fixation and dark carbon dioxide fixation by marine algae	4197
	Possible effects of organochlorine pesticides on primary producti- vity and skeletogenesis of New England estuarine and coastal mar- ine algae	4206
	Seasonal changes in antibacterial activity of North Sea water	4168
MARL		
MARSH	The role of carbon in hard water marl lakes	4140
	Aquatic plant communities in Lake Butte des Morts. Phase 2. Ef- fects of higher aquatic plants, marsh water and marsh sediments on phytoplankton	3890
MARYL	AND	
	Observations of freshwater ponds on Carroll Island and Gunpowder Neck, Maryland, with emphasis on the zooplankton	3756
MEASU	JREMENT see also ANALYSIS, ASSESSMENT, ASSAY, DETERMINATIONS, TESTS	
	The photosynthetic unit in <i>Chlorella</i> measured by repetitive short flashes	3886
	Sampling and measurement in the aquatic environment	3674
	The measurement of our natural resources .	3883
	A pH-carbon dioxide method for measuring aquatic primary productivity	3782
	Electronic particle sizing as a means of measuring production in a eutrophic lake	4052
	Automated primary productivity instrument	3601
	Primary production and phytoplankton in the Experimental Lakes Area Northwestern Ontario, and other low carbonate waters, and a liquid scintillation method for determining ¹⁴ C activity in photosynthes:	i
	Methods for determining the primary productivity of epipelic and epipsammic algal associations	3597
	An automated system for multiple recording of diurnal pH	4069
	Optical remote sensing of bioresources	3760
	Remote sensing of coastal environments using multispectral photographic techniques	3766

MEASL	JREMENT (Continued)	
		4196
	A direct method of measuring benthic primary production in streams	4186
MELO:		
	An artificial alteration of the seasonal cycle of the plankton diatom <i>Melosira italica</i> subsp. <i>subarctica</i> in an English lake	3881
MEMB	RANES	1005
	Studies on the Hill reaction of membrane fragments of blue-green algae. I. Stabilizing effect of various media on the 2,6-dichlorophenol indophenol-Hill activity of membrane fragments obtained from Anabaena cylindrica and Anabaena variabilis	4025
	Protein composition of intact and fractionaed membranes isolated from dark and light grown cells of a blue-green mutant of Rhodo-spirillum rubrum	4189
MERC		/10E
	Effect of mercury on algal growth rates	4185
MESC	OTROPHIC	3668
	Nitrogen cycle and primary production in mesotrophic Lake Lucerne (Horwer Bay) and in eutrophic Red Lake with special regard to nitrates as limiting factors	3000
MET	ABOLISM	4131
	The interactions of dissolved and particulate nitrogen in lake metabolism	
	Uptake and metabolism of 2,2-bis- $(p$ -chlorophenyl)-1,1,1-trichloro-ethane (DDT) by marine phytoplankton and its effects on growth and chloroplast electron transport	4177
MET	ALS see also TRACE ELEMENTS	(022
	Biochemical studies on marine algae VI. Concentration of selenium in marine algae and its importance as a trace metal for the growth of lavers	4033
MET	HODS see also ANALYSIS, ASSAY, ASSESSMENT, DETERMINATIONS, TESTS	0604
	Primary production and phytoplankton in the Experimental Lakes Area, Northwestern Ontario, and other low carbonate waters, and a liquid scintillation method for determining 14C activity in photosynthesis	3604
	Phytoplankton coefficients as a method of defining the degree to	3700
	The use of radioactive carbon method in studies of trophic relation	
	A rapid method for the estimation of the carbon content of seston	3781
	A pH-carbon dioxide method for measuring aquatic primary productive	71LY 3/8

METHO	DDS (Continued)	
	Methods for determining the primary productivity of epipelic and epipsammic algal associations	3597
	A direct method of measuring benthic primary production in streams	4186
MEXIC	0	
MICHI	A paleolimnology of Lake Texcoco, Mexico. Evidence from diatoms	3749
	Sorption of soluble phosphates by freshwater sediments in the Huron River basin, Michigan	3661
MICRO	DALGAE	
	Levels of dissolved oxygen and carbon fixation by marine microalgae	3864
	Production of benthic microalgae in the littoral zone of a eutro- phic lake	4035
MICRO	DBES	
	Implications of microbial polymer synthesis in waste treatment and lake eutrophication	3715
	Ecological control of microbial imbalances	4169
	The presence of microbodies in three strains of Chlorella	4026
MICRO	DBIOLOGY	
	Microbiological aspects of the pollution of fresh water with inorganic nutrients	3960
	A microbiological survey in Lake Erie near Cleveland, Ohio	4180
	Water pollution microbiology	4170
MICRO	OCYSTIS	
	Kinetics of the assembly of gas vacuoles in the blue-green alga Microcystis aeruginosa Kuetz. emend. Elekin	3878
	Characterization of the protein from gas vacuole membranes of the blue-green alga, <i>Microcystis aeruginosa</i>	4039
MICRO	DORGANIC - MICROORGANISMS	
	Bacterial microflora in Chlorella vulgaris culture	4166
	A case study of microorganic contaminants in river water	3591
MINE		
MINNE	Acid mine pollution effects on lake biology	4114
	Biological assays and water quality in Minnesota	3602
	The phytoplankton of Minnesota lakes a preliminary survey	3694
	Algal bioassay potential primary productivity studies of the lower St. Louis River, Minnesota	4038

MISSIS	SIPPI	2020
P	Phytoplankton ingestion by the fingernail clam, Sphaerium trans- versum (Say), in pool 19, Mississippi River	3828
MIXING		4002
	A kinetic model of phytoplankton growth, and its use in algal control by reservoir mixing	4092
1	Effects of low nutrient dilution water and mixing on the growth of nuisance algae	4216
MODEL:	S see also MATHEMATICS	
	Statistical model for the selection of unicellular algal strains by the rate of increase in numbers	3710
	A mathematical model of water quality in an impoundment	3899
	A model of nutrient-limited phytoplankton growth	3947
	A kinetic model of phytoplankton growth, and its use in algal control by reservoir mixing	4092
	Clarifying a production model	4214
	IOI OGY	
	Physio-morphological effects of abrupt thermal stress on diatoms	4041
	The effect of lysozyme on cell wall morphology in a blue-green alga, Cylindrospermun sp.	4037
MYXOE	BACTERIA	4009
	Algicidal nonfruiting myxobacteria with a high G + C ratios	4009
NANN	ODI ANKTON	2002
	Diurnal rhythms in netplankton and nannoplankton assimilation ratio	1042
	The relative importance of nannoplankton and netplankton as primary producers in tropical oceanic and neritic phytoplankton communities	4043
	The relative importance of nannoplankton and netplankton as primary producers in the California Current system	4044
NAUP	N TT	
	Grazing and ingestion rates of nauplii, copepodids and adults of t marine planktonic copepod Calanus helgolandicus	he 4004
NERE	POCYSTIS	4047
	Translocation of photosynthate in the brown alga Nereocystis	4047
NETF	DIANKTON	4029
	Seasonal cycles of netplankton in a cold tailwater and a natural stream in the State of Arkansas	
	Diamed rhythms in netplankton and nannoplankton assimilation rati	/.0/.2
	The relative importance of nannoplankton and netplankton as primar producers in tropical oceanic and neritic phytoplankton communities	cy 4043

NETPLANKTON (Continued)

,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
The relative importance of nannoplankton and netplankton as primary producers in the California Current system	4044
NEW ENGLAND	
Possible effects of organochlorine pesticides on primary producti- vity and skeletogenesis of New England estuarine and coastal marine algae	4206
NICARAGUA	
A highly alkaline lake in Nicaragua	3767
NICHES	
Ecological niches of sympatric phytoplankton species	4190
NITRATE	
Regulation of nitrate reductase in Chlorella vulgaris	3667
Removal of nitrate by an algal system	3906
Phytoplankton growth and composition in shipboard cultures supplied with nitrate, ammonium, or urea as the nitrogen source	4022
Nitrogen cycle and primary production in mesotrophic Lake Lucerne (Horwer Bay) and in eutrophic Red Lake with special regard to nitrates as limiting factors	3668
NITRITE	
Dependence of nitrite assimilation in green algae on energy supplied by respiration and photosynthesis	4032
NITROGEN	
Use of tests for limiting or surplus nutrients to evaluate sources of nitrogen and phosphorus for algae and aquatic weeds	3542
The relative significance of phosphorus and nitrogen as algal nutrients	3556
Studies of the physiology of heterocyst production in the nitrogen fixing blue-green alga Anabaena sp. L-31 in continuous culture	3605
Nitrogen cycle and primary production in mesotrophic Lake Lucerne (Horwer Bay) and in eutrophic Red Lake with special regard to nitrates as limiting factors	3668
Secondary effects of nitrogen in water	3783
Acetylene reduction (nitrogen fixation) in Wisconsin lakes	3813
The effect of various nitrogen sources upon the production of extracellular polysaccharide by the blue-green alga Anabaena flos aquae A-37	3891
The fate of nitrogen in aquatic ecosystems	3958
The nitrogen cycle in sediment-water systems	3959
Phytoplankton growth and composition in shipboard cultures supplied with nitrate, ammonium, or urea as the nitrogen source	4022
Nitrogen fixation in Lake Erken	4028

NITROGEN (Continued)

NI

Nl

N

Texas

	Biochemical studies on marine algae V. Effects of trace elements on the growth and nitrogen contents of laver	4048
	Localization of nitrogen fixation in Anabaena	4065
	Blue-green algal responses to some organic nitrogen substrates	4070
		4125
	Interactions of dissolved and particulate nitrogen in lake metabolism	4131
	Florida Gulf Coast	4145
	The physiological state with respect to nitrogen of phytoplankton from low nutrient subtropical water as measured by the effect of ammonium ion on dark carbon dioxide fixation	4196
	Nitrogen fixation and heterocysts in the blue-green alga Anabaena cylindrica	4200
	Influence of nitrogen deficiency on uridine incorporation into ribosomes in the green alga $\it Chlorella$	4208
TR	OGENASE	
	Acetylene-ethylene assay for nitrogenase activity in Keystone Reservoir, Oklahoma	3656
	Kinetics of synthesis of nitrogenase in batch and continuous culture of Anabaena flos aquae	4017
	Characteristics of nitrogenase activity in broken cell preparations of the blue-green alga Gloeocapsa sp. LB 795	
	Characteristics of the nitrogenase system of the blue-green alga Anabaena cylindrica	4187
	Photorespiration and nitrogenase activity in the blue-green alga, Anabaena cylindrica	4191
JI:	SANCE	
	The nuisance algae: curiosities in the biology of planktonic blue-green algae	3606
	A review of the factors limiting the growth of nuisance algae	3966
	Effects of low nutrient dilution water and mixing on the growth of nuisance algae	4216
JΤ	RIENTS	
	Nutrient management in the Potomac Estuary	3545
	Algal growth and decomposition effects on water quality, Phase II. Composition, decomposition, and nutrient regeneration of algae in batch culture	3596
	Productivity studies at Loch Leven (a shallow nutrient rich lowland	
	Limnological investigations of Texas impoundments for water qualit purposes the use of algal cultures to assess the effects of nutrient enrichment on the Highland Lakes of the Colorado River,	y 3860

NUTRIENTS (Continued)

A model of nutrient limited phytoplankton growth

Nutrient limiting factors in an arctic tundra pond

Limiting nutrient elements in filtered Lake Erie water

of nitrogen and phosphorus for algae and aquatic weeds

Use of tests for limiting or surplus nutrients to evaluate sources 3542

3947

3954

3963

The relative significance of phosphorus and nitrogen as algal nutrients	3556
The primary productivity and limiting nutrients of Little Brooklyn Lake	3670
Survey of phytoplankton productivity and nutrients in Lake Mich- igan and Lake Superior	3815
Microbiological aspects of the pollution of fresh water with inorganic nutrients	3960
Phytoplankton photosynthesis, micronutrient interactions, and inorganic carbon availability in a soft water Vermont lake	4175
Nutrient flux in estuaries	4132
Algal responses to nutrient additions in natural waters. I. Laboratory assays	4192
Algal responses to nutrient additions in natural waters. II. Field experiments	4203
Effects of low nutrient dilution water and mixing on the growth of nuisance algae	4216
Nutrient management in the Potomac Estuary	4229
Nutrients and eutrophication: The limiting nutrient controversy	4117
The role of minor nutrients in limiting the productivity of aquatic ecosystems	4126
Nutrients and phytoplankton in Lake Washington	4181
NUTRITION see also FOOD	
Food quality and zooplankton nutrition	4007
Nutritional pollution begs for a solution	3503
Phytoplankton ingestion by the fingernail clam, Sphaerium trans- versum (Say), in pool 19, Mississippi River	3828
Nutritional ecology and community structure of the phytoplankton of Green Bay	3664
Primary productivity, chemo-organotrophy, and nutritional inter- actions of epiphytic algae and bacteria on macrophytes in the littoral of a lake	3860
OCEANOGRAPHY see also MARINE, SEA WATER	
The distribution of urea in coastal and oceanic waters	3971
The relative importance of nannoplankton and netplankton as primary producers in tropical oceanic and neritic phytoplankton community	

OCEANOGRAPHY (Continued)	776
Oceanography of the nearshore coastal waters of the Pacific North- 3 west relating to possible pollution. Volume II	776
ODOR	3728
Chlorination of odorants from algal blooms	207
Planktonic blue-green algae: growth and odor production studies 4	1207
OHIO CHIO	4180
A microbiological survey in Lake Erie near Cleveland, Ohio	,100
OKLAHOMA FOR Versitors	3656
Acetylene-ethylene assay for nitrogenase activity in Keystone Reservoir, Oklahoma	
OLIGOTROPHIC	4196
The physiological state with respect to nitrogen of phytoplankton from low nutrient subtropical water as measured by the effect of ammonium ion on dark carbon dioxide fixation	1200
ONTARIO see also CANADA	3604
Primary production and phytoplankton in the Experimental Lakes Area, Northwestern Ontario, and other low carbonate waters, and a liquid scintillation method for determining 14 C activity in photosynthesis	
Chemical factors involved in the control of phytoplankton production in the Experimental Lakes Area, Northwestern Ontario	3665
Periphyton of the Experimental Lakes Area, Northwestern Untario	3702
Preliminary characterization of lakes in the Experimental Lakes Area, Northwestern Ontario, using diatom occurrences in sediments	3703
OPTICAL	4012
Optical density profiles as an aid to the study of microstratified phytoplankton populations in lakes	4012
ORGANIC	3810
Influence of medium pH and carbon dioxide on assimilation of some organic acids by Scenedesmus quadricauda	3848
Organia life in the Delta-Mendota Canal, California	4063
Release of dissolved organic matter from natural populations of	4000
Blue-green algal responses to some organic nitrogen substrates	4195
The seasonal variation of dissolved organic carbon in the inshore waters of the Menai Strait in relation to primary production	419.
ORGANOCHI ORTNE	4206
Possible effects of organochlorine pesticides on productivity and skeletogenesis of New England estuarine and coastal marine algae	4200

OSCILLAXANTHIN	
Oscillaxanthin in the sediment of Lake Washington	4030
OUTLETS	
Environmental changes produced by cold water outlets from three Arkansas reservoirs	4105
OXYGEN	
Levels of dissolved oxygen and carbon fixation by marine micro-algae	3864
Proof of two distinct enhancement effects by blue light on oxygen uptake in ${\it Chlorella}$	4055
PAAP	
Evaluation of algal assay procedures PAAP batch test PARAQUAT	3885
Some ecological effects on the use of Paraquat for the control of weeds in small lakes	3722
PARTICLE(S)	
Electronic particle sizing as a means of measuring production in a eutrophic lake	4052
PARTICULATE	
The flux of particulate carbon in an estuary	4119
Interactions of dissolved and particulate nitrogen in lake metabolism	4131
PATHOGENS	
Bacterial pathogens of freshwater blue-green algae PERIPHYTON	3865
The periphyton of the submerged macrophytes of Mikolajskie Lake	3593
Periphyton of the Experimental Lakes Area, Northwestern Ontario	370
A rapid method for the estimation of the carbon content of seston and periphyton	3783
PESTICIDES	
Tolerance of blue-green algae to pesticides	3705
Possible effects of organochlorine pesticides on primary producti- vity and skeletogenesis of New England estuarine and coastal marine algae	4200
рН	
A pH-carbon dioxide method for measuring aquatic primary pro- ductivity	3782
Influence of medium pH and carbon dioxide on assimilation of some organic acids by Scenedesmus quadricauda	3810
An automated system for multiple recording of diurnal pH	4069

PHARMACOLOGY	
Pharmacological testing of blue-green algae for constituents having therapeutic value	4095
PHOSPHATASE	
Relationship between phosphates and alkaline phosphatase of Anabaena flos aquae in continous culture	4016
PHOSPHATE	
Eutrophication of lake water microcosms: phosphate versus non- phosphate detergents	3808
Catalytic mobilization of phosphate in lake water by Cyanophyta	3811
Sorption of soluble phosphates by freshwater sediments in the Huron River basin, Michigan	3661
PHOSPHORUS	
Use of tests for limiting or surplus nutrients to evaulate sources of nitrogen and phosphorus for algae and aquatic weeds	3542
Role of phosphorus in eutrophication	3553
The relative significance of phosphorus and nitrogen as algal nutrients	3556
The interrelation of carbon and phosphorus in regulating hetero- trophic and autotrophic populations in aquatic ecosystems	3801
Plant available phosphorus status of lakes	3940
Characterization of phosphorus limited plankton algae	4124
The interrelation of carbon and phosphorus in regulating hetero- trophic and autotrophic populations in an aquatic ecosystem, Shriner Pond	4127
Aspects of phosphorus cycling in brackish waters	4129
Phosphorus, silica, and eutrophication of Lake Michigan	4134
Phosphorus in wastewater effluents and algal growth	4136
PHOTOGRAPHY	
Remote sensing of coastal environments using multispectral photographic techniques	3766
PHOTORESPIRATION	
Photorespiration and nitrogenase activity in the blue-green alga, Anabaena cylindrica	4191
PHOTOSYNTHESIS	200
The nature of the photosynthate in natural phytoplankton popu- lations in relation to light quality	3894
Translocation of photosynthate in the brown alga Nereocystis	404
Primary production and phytoplankton in the Experimental Lakes Area, Northwestern Ontario, and other low carbonate waters, and a liquid scintillation method for determining 14C activity in photosynthesis	360

PHOTOSYNTHESIS (Continued)	
Dependence of nitrite assimilation in green algae on energy supplied by respiration and photosynthesis	4032
Ecological studies of economic red algae. I. Photosynthesis and respiration of <i>Chondrus crispus</i> (Stackhouse) and <i>Gigartina stellata</i> (Stackhouse) batters	4045
Some data on the role of photosynthesis in the utilization of acetate and pyruvate by Scenedesmus quadricauda	4050
The influence of salinity on the rate of photosynthesis and abundance of some tropical phytoplankton	4051
Liberation of extracellular products of photosynthesis by tropical phytoplankton	4054
The photosynthetic unit in ${\it Chlorella}$ measured by repetitive short flashes	3886
Phytoplankton photosynthesis, micronutrient ineteractions and inorganic carbon availability in a soft water Vermont Lake	4175
Changes in pigment composition and photosynthesis induced by iron deficiency in the blue-green alga Anacystis nidulans	4201
Studies on effects of certain quinones. II. Photosynthetic in- corporation of 14C-dioxide by Chlorella	4210
Light induced inhibition of respiration in DCMU-poisoned <i>Chlorella</i> caused by photosystem I activity	4204
PHYSICAL PROPERTIES	
Some chemical and physical properties of two toxins from the red tide organism, Gymnodinium breve	3697
PHYSIOLOGY	
Physio-morphological effects of abrupt thermal stress on diatoms	4041
Studies on the physiology of heterocyst production in the nitrogen fixing blue-green alga <i>Anabaena</i> sp. L-31 in continuous culture	3605
The physiological state with respect to nitrogen of phytoplankton from low nutrient subtropical water as measured by the effect of ammonium ion on dark carbon dioxide fixation	4196
PHYTOPLANKTON	
Extrusion of carbon accompanying uptake by amino acids by marine phytoplankters	4060
Comparison of the primary production of phytoplankton in three lakes of different trophic type	3599
Primary production and phytoplankton in the Experimental Lakes Area, Northwestern Ontario, and other low carbonate waters, and a liquid scintillation method for determining ¹⁴ C activity in photosynthesis	3604
Nutritional ecology and community structure of the phytoplankton of Green Bay	3664

PHYTOPLANKTON (Continued)

FEATURE (SOLITION)	3665
Chemical factors involved in the control of phytoplankton pro- duction in the Experimental Lakes Area, Northwestern Ontario	
The phytoplankton of Minnesota Lakes a preliminary survey	3694
Phytoplankton coefficients as a method of defining the degree to which water habitats are trophic	3700
Survey of phytoplankton productivity and nutrients in Lake Michigan and Lake Superior	3815
Phytoplankton ingestion by the fingernail claim, Sphaerium trans- versum (Say), in pool 19, Mississippi River	3828
Phytoplankton primary production in some Finnish coastal areas in relation to pollution	3863
Phytoplankton primary production in the Baltic area	3879
Phytoplankton primary production off the coast of Helsinki	3880
Production of phytoplankton and zooplankton in Canadian Shield lakes	3887
Aquatic plant communities in Lake Butte des Morts. Phase 2. Effects of higher aquatic plants, marsh water and marsh sediments on phytoplankton	
Physical ankton energetics in a sewage treatment lagoon	3893
The nature of the photosynthate in natural phytoplankton population in relation to light quality	
A model of nutriet limited phytoplankton growth	3947
Ton transport studies on phytoplankton of a fish pond at Ile-11e	3953
Optical density profiles as an aid to the study of microstratilled	
Phytoplankton kinetics in a subtropical estuary. Eutrophication	4019
Comparison of phytoplankton production between natural and aftered	
Continuous cultures of natural populations of phytoplankton in	4021
Phytoplankton growth and composition in shipboard cultures supplied with nitrate, ammonium, or urea as the nitrogen source	ed 4022
Available iron: a limiting factor for marine phytoplankton	4042
The relative importance of nannoplankton and netplankton as primary producers in tropical oceanic and neritic phytoplankton	
The influence of salinity on the rate of photosynthesis and	4051
Liberation of extracellular products of photosynthesis by tropica	
Bioluminescence and phytoplankton successions in Bahia Fosforesce Puerto Rico	ente, 403

PH	YTOPLANKTON (Continued)	
	Calefaction and phytoplankton	4059
	Development of toxicity test procedures for marine phytoplankton	4061
	Release of dissolved organic matter from natural populations of marine phytoplankton	4063
	A kinetic model of phytoplankton growth, and its use in algal control by reservoir mixing	4092
	Phytoplankton photosynthesis micronutrient interactions, and inorganic carbon avilability in a soft water Vermont Lake	4175
	Uptake and metabolsim of 2,2-bis-(p-chlorophenyl)-1,1,1-trichloro- ethane (DDT) by marine phytoplankton and its effects on growth and chloroplast electron transport	4177
	Nutrients and phytoplankton in Lake Washington	4181
	Ecological niches of sympatric phytoplankton species	4190
	The physiological state with respect to nitrogen of phytoplankton from low nutrient subtropical water as measured by the effect of ammonium ion on dark carbon dioxide fixation	4196
PI	GMENTS	
	Pigmentation of algae under pressure	3888
	The diversity of pigments in lake sediments and its ecological significance	3645
	Changes in pigment composition and photosynthesis induced by iron deficiency in the blue-green alga Anacystis nidulans	4201
PL	ANKTON	
	The productivity of some planctonic species of algae in their nature environment	al 402
	The use of radioactive carbon method in studies of trophic relation ships of plankton	370
	An artificial alteration of the seasonal cycle in the plankton diatom <i>Melosira italica</i> subsp. subarctica in an English lake	3881
	Plankton population structure in the lower Coeur d'Alene River, delta, and lake	3884
	Plankton productivity studies in Lake St, Clair	3895
	Plankton as indicators of pollution in New York waters	4027
	Seasonal cycles of net plankton in a cold tailwater and a natural stream in the State of Arkansas	4029
	Water quality and plankton ecology the Christina River, Dela- ware	4057
	The nuisance algae: Curiosities in the biology of planktonic blue-green algae	3606
	A hypothesis concerning silica and the freshwater planktonic diatom	ns 3802
	Grazing and ingestion rates of nauplii, copepodids and adults of the marine planktonic copepod Calanus helgolandicus	4004

PLANKTON (Continued)	
Characterization of phosphorus limited plankton algae	4124
Plankton in Lake Lilla Ullevifjarden, eastern Sweden	4176
	4209
Fatty acids in three plankton organisms Symposium on planktonic organisms as biological indicators of their	4174
environment. (Preliminary reports)	4207
Planktonic blue-green algae: growth and odor production studies PLANTS see also MACROPHYTES, VEGETATION, WEEDS (see also specific phyllum class, order, family, etc.)	2.)
Aquatic plant communities in Lake Butte des Morts. Phase 2. Effects of higher aquatic plants, marsh water and marsh sediments on phytoplankton	3070
Plant available phosphorus status of lakes	3940
POLLUTION	
Nutritional pollution begs for a solution	3503
Assessment of pollution effects by the use of algae	3594
Oceanography of the nearshore coastal waters of the Pacific Northwest relating to possible pollution, Volume II	3776
Phytoplankton primary production in some Finnish coastal areas in relation to pollution	3863
Microbiological aspects of the pollution of fresh water with inorganic nutrients	3960
Plankton as indicators of pollution in New York waters	4027
Estimating eutrophic potential of pollutants	4194
A hydrobiological study of the polluted River Lieve (Ghent, Belgium)	4107
Acid mine pollution effects on lake biology	4114
Water pollution microbiology	4170
Pollution controlled changes in algal and protozoan communities	4179
POLYGLUCANS De novo synthesis of polyglucans by a phosphorylase isoenzyme in algae	4024
POLYMERS	3715
POLYMERS Implications of microbial polymer synthesis in waste treatment and lake eutrophication	3876
Friction reduction by algal and bacterial polymers	30/0
DOLVENCCUAPIDE	200
The effect of various nitrogen sources upon the production of extracellular polysaccharide by the blue-green alga Anabaena flos aquae A-37	3891

PONDS

The role of inorganic ions in the eutrophication of farm ponds	3549
Standing crops and primary productivity of the epipelon of two small ponds in North Somerset, U.K.	3598
Some observations on the limnology of a pond receiving animal waste	s 366
Observations of freshwater ponds on Carroll Island and Gunpowder Neck, Maryland, with emphasis on the zooplankton	3756
Ion transport studies on phytoplankton of a fish pond at Ile-ile	3953
Nutrient limiting factors in an arctic tundra pond	3954
The interrelation of carbon and phosphorus in regulating hetero- trophic and autotrophic populations in an aquatic ecosystem, Shriner Pond	4127
Eutrophication of surface watersLake Tahoe pilot pond and field studies	4130
POPULATIONS see also SYSTEMATICS	
The interrelation of carbon and phosphorus in regulating hetero- trophic and autotrophic populations in aquatic ecosystems	3801
Plankton population structure in the lower Coeur d'Alene River, delta and lake	3884
Distribution of blue-green algal viruses in various types of natural waters	3889
The nature of the photosynthate in natural phytoplankton populations in relation to light quality	3894
Species diversity and water quality in Galveston Bay, Texas	3989
Energetics and population dynamics of Diaptomus gracilis	3997
Optical density profiles as an aid to the study of microstratified phytoplantkon populations in lakes	4012
Continuous cultures of natural populations of phytoplankton in dilute, treated sewage effluent	4021
Release of dissolved organic matter from natural populations of marine phytoplankton	4063
The interrelation of carbon and phosphorus in regulating hetero- trophic and autotrophic populations in an aquatic ecosystem, Shriner Pond	4127
Algal populations in Moses Lake, Washington. Temporal and spatial distribution and relationship with environmental parameters	4178
Ecological niches of sympatric phytoplankton species	4190
The productivity of some planktonic species of algae in their natural environment	4023
POWER PLANTS	
Primary and secondary production in a lake heated by a thermal power plant	3699

PRIMARY PRODUCTIVITY

Methods for determining the primary productivity of epipelic and epipsammic algal associations	3597
Standing crops and primary productivity of the epipelon of two small ponds in North Somerset, U.K.	3598
Comparison of the primary production of phytoplankton in three lakes of different trophic type	3599
Automated primary productivity instrument	3601
Primary production and phytoplankton in the Experimental Lakes Area, Northwestern Ontario, and other low carbonate waters, and a liquid scintillation method for determining ¹⁴ C activity in photosynthesis	3604
Primary production	3662
Nitrogen cycle and primary production in mesotrophic Lake Lucerne (Horwer Bay) and in eutrophic Red Lake with special regard to nitrates as limiting factors	3668
The primary productivity and limiting nutrients of Little Brooklyn Lake	3670
Primary production and standing crops of epipsammic and epipelic algae	3695
Primary and secondary production in a lake heated by thermal power plant	3699
A pH-carbon dioxide method for measuring aquatic primary productivity	3782
Primary productivity, chemo-organotrophy, and nutritional inter- actions of epiphytic algae and bacteria on macrophytes in the littoral of a lake	3860
Primary productivity in five Salt Valley reservoirs	3861
Phytoplankton primary production in some Finnish coastal areas in relation to pollution	3863
Phytoplankton primary production in the Baltic area	3879
Phytoplankton primary production off the coast of Helsinki	3880
Algal bioassay potential primary productivity studies of the lower St. Louis River, Minnesota	4038
The relative importance of nannoplankton and netplankton as primary producers in tropical oceanic and neritic phytoplankton communities	4043
The relative importance of nannoplankton and netplankton as primary producers in the California Current system	4044
A direct method of measuring benthic primary production in streams	4180
The seasonal variation of dissolved organic carbon in the inshore waters of the Menai Strait in relation to primary production	419
The fertilization of Great Central Lake. I. Effect on primary production	420

PR:	IMARY PRODUCTIVITY (Continued)	
	Possible effects of organochlorine pesticides on primary pro- ductivity and skeletogenesis of New England estuarine and coastal marine algae	4206
PR	OCEDURES see also ANALYSIS, ASSESSMENT, DETERMINATIONS, MEASUREMENTS,	TESTS
	Evaluation of algal assay procedures PAAP batch test	3885
	Development of toxicity test procedures for marine phytoplankton	4061
PR	ODUCTIVITY	
	An experimental approach to the production dynamics and structure of freshwater animal communities	3794
	Production in several Mazurian lakes	3873
	Production of phytoplankton and zooplankton in Canadian Shield lakes	3887
	Comparison of phytoplankton production between natural and altered areas in West Bay, Texas	4020
	Production of benthic microalgae in the littoral zone of a eutro- phic lake	4035
	Electronic particle sizing as a means of measuring production in a eutrophic lake	4052
	Survey of phytoplankton productivity and nutrients in Lake Michigan and Lake Superior	3815
	Productivity studies at Loch Leven (a shallow nutrient-rich low-land lake)	3842
	Biological productivity of the Rybinsk Reservoir	3851
	Biological productivity of the main communities of the Red Lake	3862
	Productivity problems of freshwaters	3875
	Plankton productivity studies in Lake St. Clair	3895
	The productivity of some planktonic species of algae in their natural environment	4023
	Clarifying a production model	4214
	The role of minor nutrients in limiting the productivity of aquatic ecosystems	4126
	Productivity and solar energy conversion in reed swamp stands in in comparison with outdoor mass cultures of algae in the temperate climate of Central Europe	4151
PROTEIN		
	Characterization of the protein from gas vacuole membranes of the blue-green alga, <i>Microcystis aeruginosa</i>	4039
	Protein composition of intact and fractionated membranes isolated from dark and light grown cells of a blue-green mutant of	4189

PROTOPLASTS The assimilation of nucleic acid precursors by intact cells and 4049	
The assimilation of nucleic acid precursors by intact cells and 4049	
protoplasts of the blue-green alga Anacystis nidulans	
PROTOZOA 4179	
Pollution controlled changes in algal and protozoan communities 4179	
PYRUVATE	
Some data on the role of photosynthesis in the utilization of 4050 acetate and pyruvate by Scenedesmus quadricauda	
QUINONES 4210	
Studies on effects of certain quinones. II. Photosynthetic 4210 incorporation of 14C-dioxide by Chlorella	
RADIATION	
Ultraviolet radiation studies on the colonial alga, Eudorina 4040 elegans	
RED ALGAE	
Ecological studies of economic red algae. I Photosynthesis and 4045 and respiration of Chondrus crispus (Stackhouse) and Gigartina stellata (Stackhouse) batters	
RED TIDE 3697	
Some chemical and physical properties of two toxins from the real tide organism, Gymnodinium breve	
A freshwater red tide on Clear Lake, California 4034	
REED(S)	
Productivity and solar energy conversion in reed swamp stands in 4151 comparison with outdoor mass cultures of algae in the temperate climate of Central Europe	
REMOVAL 3725	
Algal removal by alum coagulation	
Removal of nitrate by an algal system 3906)
REPRODUCTION 4142	,
Ingestion, assimilation, survival, and reproduction by baptimes pulex fed seven species of blue-green algae	4
RESERVOIRS see also IMPOUNDMENTS, LAKES	_
Acetylene-ethylene assay for nitrogenase activity in Keystone 3000 Reservoir, Oklahoma	
The daily carbon gains and losses in the seston of Queen Mary 3819 Reservoir, England, during 1968	
Riological productivity of the Rybinsk Reservoir	
A kinetic model of phytoplankton growth, and its use in algal 409	
A study of the limnetic zooplankton of five flood control reservoirs 30	33
Primary productivity in five Salt Valley reservoirs 386	I

RESERVOIRS see also IMPOUNDMENTS, LAKES	
Environmental changes produced by cold water outlets from three Arkansas reservoirs	4105
RESOURCES	
The measurement of our natural resources RESPIRATION	3883
Ecological studies of economic red algae. I. Photosynthesis and respiration of <i>Chondrus crispus</i> (Stackhouse) and <i>Gigartina stellata</i> (Stackhouse) batters	4045
Dependence of nitrite assimilation in green algae on energy supplied by respiration and photosynthesis	4032
Light induced inhibition of respiration in DCMU-poisoned <i>Chlorella</i> caused by photosystem I activity	4204
REVIEWS	
A review of the factors limiting the growth of nuisance algae	3966
RHODAMIDE	
Laser induced fluorescence in rhodamide B and algae RHODOSPIRILLUM	3868
Protein composition of intact and fractionated membranes isolated from dark and light grown cells of a blue-green mutant of Rhodospirillum rubrum	4189
RHYTHMS	
Diurnal rhythms in netplankton and nannoplankton assimilation ratio	388
No desynchronization among four circadian rhythms in the uni-	
cellular alga, Gonyaulax polyedra	4193
	4193
cellular alga, Gonyaulax polyedra	4193 3591
cellular alga, Gonyaulax polyedra RIVERS see also STREAMS	
cellular alga, Gonyaulax polyedra RIVERS see also STREAMS A case study of microorganic contaminants in river water Sorption of soluble phosphates by freshwater sediments in the	3591
cellular alga, Gonyaulax polyedra RIVERS see also STREAMS A case study of microorganic contaminants in river water Sorption of soluble phosphates by freshwater sediments in the Huron River basin, Michigan Phytoplankton ingestion by the fingernail clam, Sphaerium trans-	3591 3661 3828
cellular alga, Gonyaulax polyedra RIVERS see also STREAMS A case study of microorganic contaminants in river water Sorption of soluble phosphates by freshwater sediments in the Huron River basin, Michigan Phytoplankton ingestion by the fingernail clam, Sphaerium transversum (Say), in pool 19, Mississippi River Limnological investigations of Texas impoundments for water quality management purposes the use of algal cultures to assess the effects of nutrient enrichment on the Highland Lakes of the	3591 3661 3828
RIVERS see also STREAMS A case study of microorganic contaminants in river water Sorption of soluble phosphates by freshwater sediments in the Huron River basin, Michigan Phytoplankton ingestion by the fingernail clam, Sphaerium transversum (Say), in pool 19, Mississippi River Limnological investigations of Texas impoundments for water quality management purposes the use of algal cultures to assess the effects of nutrient enrichment on the Highland Lakes of the Colorado River, Texas Plankton population structure in the lower Coeur d'Alene River,	3591 3661 3828 3866
RIVERS see also STREAMS A case study of microorganic contaminants in river water Sorption of soluble phosphates by freshwater sediments in the Huron River basin, Michigan Phytoplankton ingestion by the fingernail clam, Sphaerium transversum (Say), in pool 19, Mississippi River Limnological investigations of Texas impoundments for water quality management purposes the use of algal cultures to assess the effects of nutrient enrichment on the Highland Lakes of the Colorado River, Texas Plankton population structure in the lower Coeur d'Alene River, delta, and lake Effects of secondary and tertiary wastewater effluents on algal	3591 3661 3828 3866

RIVERS (Continued)	4107
A hydrobiological study of the polluted River Lieve (Ghent, Belgium)	
SAKHALIN	4205
Algae of the littoral of west coast of Sakhalin	7203
SALINITY	3748
A ecological study of a pool subject to varying salinity (Swanpool, Falmouth), an introductory account of the topography, fauna and flora	4051
The influence of salinity on the rate of photosynthesis and abund- ance of some tropical phytoplankton	4031
SAMPLING see MEASUREMENT	
SCENEDESMUS	3810
Influence of medium pH and carbon dioxide on assimilation of some organic acids by Scenedesmus quadricauda	
Some data on the role of photosynthesis in the utilization of acetate and pyruvate by Scenedesmus quadricauda	4050
SEASONAL	3881
An artificial alteration of the seasonal cycle of the plankton diatom Melosira italica subsp. subarctica in an English lake	4029
Seasonal cycles of net plankton in a cold tailwater and a natural	
Grace of changes in antibacterial activity of North Sea water	4168
The seasonal variation of dissolved organic carbon in the inshore waters of the Menai Strait in relation to primary production	4195
ALL MARINE OCEANOGRAPHY	sis 406
Experimental decomposition of algae in seawater and early diagenes	;1S 400
CECONDADV	
Primary and secondary production in a lake heated by thermal power	5 3099
plant	3783
Secondary effects of nitrogen in water	3968
Effects of secondary and tertiary wastewater effluents on algal growth in a lake-river system	
SEDIMENTS - SEDIMENTATION see also MUD	3959
The nitrogen cycle in sediment-water systems	4030
a illower bin in the sediment of Lake Washington	3645
The diversity of pigments in lake sediments and its ecological	3661
Sorption of soluble phosphates by freshwater sediments in the Huron River basin, Michigan	3001

SEDIMENTS - SEDIMENTATION (Continued)	
Preliminary characterization of lakes in the Experimental Lakes Area, Northwestern Ontario, using diatom occurrences in sediments	3703
Aquatic plant communities in Lake Butte des Morts. Phase 2. Effects of higher aquatic plants, marsh water and marsh sediments on phytoplankton	3890
SELENASTRUM	
Adenosine triphosphate content of Selenastrum capricornutum SELENIUM	3546
Toxicity of selenium to the blue-green algae, Anacystis nidulans and Anabaena variabilis	3721
Biochemical studies on marine algae VI. Concentration of selenium in marine algae and its importance as a trace metal for the growth of lavers	
SESTON	
A rapid method for the estimation of the carbon content of seston and periphyton	3781
The daily carbon gains and losses in the seston of Queen Mary Reservoir, England, during 1968	3819
SEWAGE - SEWERAGE	
Phytoplankton energetics in a sewage treatment lagoon	3893
Continuous cultures of natural populations of phytoplankton in dilute, treated sewage effluent	4021
Carbon limitation in sewage laggons	4128
SILICA	
A hypothesis concerning silica and the freshwater planktonic diatoms	3802
Phosphorus, silica, and eutrophication of Lake Michigan SOFT WATER	4134
Phytoplankton photosynthesis, micronutrient interactions and inorganic carbon availability in a soft water Vermont lake SOLAR ENERGY	4175
Productivity and solar energy conversion in reed swamp stands in comparison with outdoor mass cultures of algae in the temperate climate of Central Europe	4151
SORPTION see also UPTAKE	
Sorption of soluble phosphates by freshwater sediments in the Huron River Basin, Michigan	3661
SPECIES see POPULATIONS, SYSTEMATICS	
SPERMATOGENESIS	
The life cycle with sexual phase in the marine diatom Coscinodiscus	4068

SPHAERIUM	
Phytoplankton ingestion by the fingernail claim, Sphaerium trans- versum (Say), in pool 19, Mississippi River	3828
STANDING CROPS	3598
Standing crops and primary productivity of the epipelon of two small ponds in North Somerset, U.K.	
Primary production and standing crops of epipsammic and epipelic algae	3695
STATISTICAL see also MATHEMATICAL, MODELS	0710
Statistical model for the selection of unicellular algal strains by the rate of increase in numbers	3710
STREAMS see also RIVERS	1000
Seasonal cycles of net plankton in a cold tailwater and a natural stream in the State of Arkansas	4029
A direct method of measuring benthic primary production in streams	4186
STRESS	
Physio-morphological effects of abrupt thermal stress on diatoms	4041
SUBSTRATES	
Blue-green algal responses to some organic nitrogen substrate	4070
CHRTROPICAL	
Phytoplankton kinetics in a subtropical estuary, Eutrophication	4019
The physiological state with respect to nitrogen of phytoplankton from low nutrient subtropical water as measured by the effect o ammonium ion on dark carbon dioxide fixation	4196 f
CHDVTVAI	
Ingestion, assimilation, survival, and reproduction by <i>Daphnia</i> pulex fed seven species of blue-green algae	4142
SHAMD	,,,,,
Productivity and solar energy conversion in reed swamp stands in comparison with outdoor mass cultures of algae in the temperate climate of Central Europe	4151
SWEDEN	
Plankton in Lake Lilla Ullevifjarden, eastern Sweden	4176
CVITHES IS	071
Implications of microbial polymer synthesis in waste treatment	3715
The involvement of lecithin and monogalactosyl diglyceride in	4011
Kinetics of synthesis of nitrogenase in batch and continuous	401
De novo synthesis of polyglucans by a phosphorylase isoenzyme in algae	402

SYSTE	EMATICS see also POPULATIONS	
	A synopsis of the genus <i>Chara</i> , series <i>Gymnobasalia</i> (subsection Willdenowia <i>RDW</i>)	4005
	Numerical taxonomy: The systematic categorization of the North American genera of freshwater algae	3867
	NIQUES see also ANALYSIS, ASSAYS, DETERMINATIONS, MEASUREMENT, METHOU	DS,
	Remote sensing of coastal environments using multispectral photographic techniques	3766
	Optical remote sensing of bioresources	3760
TEMPE	erate	
TEMP	Productivity and solar energy conversion in reed swamp stands in comparison with outdoor mass cultures of algae in the temperate climate of Central Europe	4151
LEMPE	ERATURE	
	Effect of wide temperature fluctuation in the blue-green algae of Bead Geyser, Yellowstone National Park	4046
	The influence of culture temperature on the carotenoid composition of the blue-green alga Anacystis nidulans	4184
TERT	IARY	
	Effects of secondary and tertiary wastewater effluents on algal growth in a lake-river system	3968
TESTS	S see also ANALYSIS, ASSAYS, DETERMINATIONS, MEASUREMENTS, METHODS	
	Evaluation of algal assay procedures PAAP batch test	3885
	Development of toxicity test procedures for marine phytoplankton	4061
	Laser induced fluorescence in rhodamine B and algae	3868
	Pharmacological testing of blue-green algae for constituents having therapeutic value	4095
	Use of tests for limiting or surplus nutrients to evaluate sources of nitrogen and phosphorus for algae and aquatic weeds	3542
TEXAS	S	
	Limnological investigations of Texas impoundments for water quality management purposes limnological and water quality data for the Highland Lakes, 1968	3752
	Limnological investigations of Texas impoundments for water quality management purposes the use of algal cultures to assess the effects of nutrient enrichment on the Highland Lakes of the Colorado River, Texas	3866
	Species diversity and water quality in Galveston Bay, Texas	3989
	Comparison of phytoplankton production between natural and altered areas in West Bay, Texas	4020

THERMAL see also HEATED	
Effects of thermal discharges on the chemical parameters of water quality and eutrophication	3509
Primary and secondary production in a lake heated by thermal power plant	3699
Physio-morphological effects of abrupt thermal stress on diatoms	4041
TOXICITY - TOXINS	3697
Some chemical and physical properties of two toxins from the red tide organism, Gymnodinium breve	
Toxicity of ammonia to marine diatoms	3698
Toxicity of selenium to the blue-green algae, Anacystis nidulans and Anabaena variabilis	3721
Are some bacteria toxic for marine algae?	4015
Development of toxicity test procedures for marine phytoplankton	4061
TRACE ELEMENTS see also METALS	4033
Biochemical studies on marine algaeVI. Concentration of sele- nium in marine algae and its importance as a trace metal for the growth of lavers	,,,,,
Biochemical studies on marine algaeV. Effects of trace elements on the growth and nitrogen contents of laver	4048
Limiting nutrient elements in filtered Lake Erie water	3963
TRIPHOSPHATE	0.001
Adenosine triphosphate of Selenastrum capricornutum	3546
TROPHIC	2500
Comparison of the primary production of phytoplankton in three lakes of different trophic type	3599
Phytoplankton coefficients as a method of defining the degree to which water habitats are trophic	3700
The use of radioactive carbon method in studies of trophic relationships of plankton	3704
TROPICAL	
Lake George, Uganda. Studies on a tropical ecosystem	3751
The relative importance of nannoplankton and netplankton as primar producers in tropical oceanic and neritic phytoplankton communit	
The influence of salinity on the rate of photosynthesis and abundance of some tropical phytoplankton	4001
Liberation of extracellular products of photosynthesis by tropical phytoplankton	4054
UGANDA	
Lake George, Uganda. Studies on a tropical ecosystem	3751
III TRAVIOLET	
Ultraviolet radiation studies on the colonial alga, Eudorina elego	ans 4040
Ultraviolet ladiation observed	

UNICEL	LULAR	
S	Statistical model for the selection of unicellular algal strains by the rate of increase in numbers	3710
F	Fatty acid composition of unicellular strains of blue-green algae	4188
N	No desynchronization among four circadian rhythms in the unicellular alga, Gonyaulax polyedra	4193
UPTAKE	E see also SORPTION	
Γ	DDT uptake and growth of Euglena gracilis	3595
F	Proof of two distinct enhancement effects by blue light on oxygen uptake in <i>Chlorella</i>	4055
E	Extrusion of carbon accompanying uptake of amino acids by marine phytoplankters	4060
τ	Uptake and metabolism of 2,2-bis-(p-chlorophenyl)-1,1,1-trichloro- ethane (DDT) by marine phytoplankton and its effects on growth and chloroplast electron transport	4177
UREA		
Т	The distribution of urea in coastal and oceanic waters	3971
F	Phytoplankton growth and composition in shipboard cultures supplied with nitrate, ammonium, or urea as the nitrogen source	4022
URIDIN	NE	
]	Influence of nitrogen deficiency on uridine incorporation into ribosomes in the green alga <i>Chlorella</i>	4208
VACUOL	_ES	
C	Characterization of the protein from gas vacuole membranes of the blue-green alga, Microcystis aeruginosa	4039
k	Kinetics of the assembly of gas vacuoles in the blue-green alga Microcystis αeruginosα Kuetz, emend. Elekin	3878
VESIC	LES	
A	A study of the strength and stability of gas vesicles isolated from a blue-green alga	4018
VIRUSE	ES	
Ι	Distribution of blue-green algal viruses in various types of natural waters	3889
VOLVOO	CACEAE	
G	Growth inhibitors produced by the green algae (Volvocaceae)	3718
WASTES		
5	Some observations on the limnology of a pond receiving animal	3669

WASTEWATER 3968 Effects of secondary and tertiary wastewater effluents on algal growth in a lake-river system 4136 Phosphorus in wastewater effluents and algal growth WATER QUALITY 3502 Water quality problems in Dane County, Wisconsin Effects of thermal discharges on the chemical parameters of 3509 water quality and eutrophication 3562 The use of biological analyses as indicators of water quality Algal growth and decomposition effects on water quality, Phase II. 3596 Composition, decomposition, and nutrient regeneration of algae in batch culture 3602 Biological assays and water quality in Minnesota A technical assessment of current water quality conditions and 3658 factors affecting water quality in the upper Potomac Estuary The use of biological analyses as indicators of water quality 3676 Limnological investigations of Texas impoundments for water 3752 quality management purposes -- limnological and wate quality data for the Highland Lakes, 1968 Limnological investigations of Texas impoundments for water quality 3866 management purposes -- the use of algal cultures to assess the effects of nutrient enrichment on the Highland Lakes of the Colorado River, Texas 3899 A mathematical model of water quality in an impoundment Species diversity and water quality in Galveston Bay, Texas 3989 Water quality and plankton ecology -- the Christina River, 4057 Delaware (see also specific phyllum, class, order, family, etc.) WEEDS see also MACROPHYTES, PLANTS, VEGETATION Use of tests for limiting or surplus nutrients to evaluate sources 3542 of nitrogen and phosphorus for algae and aquatic weeds Some ecological effects on the use of Paraquat for the control of 3722 weeds in small lakes WISCONSIN 3502 Water quality problems in Dane County, Wisconsin Actylene reduction (nitrogen fixation) in Wisconsin lakes 3813 YFI I OWSTONE Effect of wide temperature fluctuation on the blue-green algae 4046 of Bead Geyser, Yellowstone National Park **ZOOPLANKTON** 3561 Effects of zooplankton on algae in Westhampton Lake Observations of freshwater ponds on Carroll Island and Gunpowder 3756 Neck, Maryland, with emphasis on the zooplankton A study of the limnetic zooplankton of five flood control reservoirs 3833

ZOOPLANKTON (Continued)

*		
Production of phytoplankt lakes	on and zooplankton in Canadian Shield	3887
Food quality and zooplank	ton nutrition	4007
, Macrophytes		
	or surplus nutrients to evaluate sources rus for algae and aquatic weeds	3542
	ized aquatic ecosystem, the duckweed denvironmental influences	3564
Respiration of aquatic ma	crophytes in eutrophic ecosystems	3573
The contribution of highe drainage-free water bas	r plants in the productivity of ins	3585
A case study of microorga	nic contaminants in river water	3591
The periphyton of the sub	merged macrophytes of Mikolajskie Lake	3593
Eradication and utilizati	on of water hyacinth	3616
	ence in the matter of pollution of the ng Island Sound and its tributaries -	3626
The diversity of pigments significance	in lake sediments and its ecological	3645
Recent decline in the dis milfoil in Chesapeake B	tribution and abundance of eurasian ay	3673
Seasonal changes in the paquatic weeds	roximate composition of some common	3675
Ecology of aquatic vascul	ar plants in southern Ontario impoundments	3681
Some ecological effects o of weeds in small lakes	n the use of Paraquat for the control	3722
	trol of eurasian watermilfoil (Murio- the Tennessee Valley from 1960 through	3730
Herbicidal treatment effe alligatorweed	ct of 2,4-D on carbohydrate levels of	3731
Onondaga Lake study		3754
	r ponds on Carroll Island and Gunpowder phasis on the zooplankton	3756
Optical remote sensing of	bioresources	3760
Remote sensing of coastal photographic techniques	environments using multispectral	3766
Fertility and aquatic bio	mass in Southeastern impoundments	3803
Mineralization of organic	phosphorus in oligotrophic lake sediments	3823
Production studies of som	e macrophytes of Srinagar lakes	3837
Color infrared photograph	y from 60,000 feet altitude as a tool for	3843

c. Macrophytes (Continued)

phytes (tone mada)	
Comparative leaf structure of aquatic Polygonum species	3845
The littoral macrophyte vegetation of Lake Wingra	3846
Phytochemical, pharmacological and antimicrobial screening of Minnesotan aquatic plants	3852
Multispectral studies of vegetation and hydrologic conditions in south Florida	3853
An ecological study of the macrophytic vegetation of the Doohadhari Lake, Raipur, M.P., India. 2. Physical factors	3854
Hydrarch succession and net primary production of oxbow lakes in central Alberta	3855
Parameters affecting the growth of <i>Ulva latissima</i> in a polluted estuary	3857
Primary productivity, chemo-organotrophy, and nutritional inter- actions of epiphytic algae and bacteria on macrophytes in the littoral of a lake	3860
Friction reduction by algal and bacterial polymers	3876
Aquatic plant communities in Lake Butte des Morts: Phase 2. Effects of higher aquatic plants, marsh water and marsh sediments on phytoplankton	3890
Seasonal variation in primary productivity in three tropical ponds	3892
Physical processing characteristics of some aquatic macrophytes as related to mechanical harvesting	3900
Aquatic forage processing in Florida	3901
Seasonal changes in the proximate composition of some common aquati-	c 3903
Aquatic plants of El Salvador	3980
Further studies on productivity, nutrient and pigment relation- ships in <i>Typha latifolia</i> populations	3981
The dynamics of dry matter and chemical substances in a <i>Juncus</i> effusus population	3982
Nutritive quality of food in ecological systems	3983
Relationships between production, nutrient accumulation, and chlorophyll synthesis in an <i>Eleocharis quadrangulata</i> population	3984
Variation in the elemental content of Eichhornia crassipes	3986
Evidence that nitrogen supply influences the distribution of a freshwater macrophyte, Ceratophyllum demersum	3990
The distribution, the phytosociological composition, and the ecology of the vascular macrophytes in the Moosach River system near Munich	3998
Endogenous light-on rhythm in respiration of a long-day duckweed, Lemna gibba G3 II. On basic and rhythmic components of the rhyth	4000 m

c. Macrophytes (Continued)

	The	distribution and control of macrophyte biomass in Lake Wingra	4002
		emblance of growth substances to metal chelators with respect o their actions on duckweed growth	4003
	Res	ponse of aquatic plants to combinations of Endothall and copper	4094
	The	role of nitrogen in eutrophic processes	4125
	Nut	rient flux in estuaries	4132
		e influence of nutrient pollution levels upon element constitution and morphology of <i>Elodea canadensis</i> Rich. in Michx.	n 4141
		mal-sediment relations and community analysis of a Florida stuary	4143
	Nut	ritive quality of food in ecological systems	4144
	C	ductivity and solar energy conversion in reed swamp stands in comparison with outdoor mass cultures of algae in the temperate climate of central Europe	4151
	Ada	ptive leaf architecture in emergent and floating Sparganium	4160
	Car	nivorous pathway of phosphorus uptake by Utricularia inflata	4164
	A q	uantitative sampler for aquatic phytomacrofauna	4165
		tosynthesis and respiration in Myriophyllum spicatum L. as related to salinity	4167
	The	e effects of artificial aeration on lake ecology	4217
	Her	bicidal control of aquatic plants	4218
d.	Zooplan	ıkton	
		stacean plankton of 146 alpine and subalpine lakes and ponds in vestern Canada	3558
	Eff	ects of zooplankton on algae in Westhampton Lake	3561
	The	e use of biological analyses as indicators of water quality	3562
	G	tribution and abundance of planktonic crustacea in ponds near Georgian Bay (Ontario, Canada) in relation to hydrography and vater chemistry	3563
	Ver	tical migration of zooplankton in western Lake Superior	3588
	The	e periphyton of the submerged macrophytes of Mikolajskie Lake	3593
		ne aspects of the biology of Lake Trawsfynydd; a power station cling pond	3629
	Sel	lenium: The unknown pollutant	3637
	San	mpling and measurement in the aquatic environment	3674
		e food sources of lake zooplankton. (In Polish with English summary)	3677
		ustacean plankton communities in 45 lakes in the Experimental Lakes Area, Northwestern Ontario	3682
	The	e crustacean plankton communities of lakes	3683

d. Zooplankton (Continued)

Tankton (continued)	
Vertical distribution and seasonal abundance of zooplankton in two shallow lakes of the Experimental Lakes Area, Northwestern Ontario	3685
The zooplankton of fresh and brackish waters of the Cape Thompson area, northern Alaska	3691
Primary and secondary production in a lake heated by thermal power plant	3699
The use of radioactive carbon method in studies of trophic relationships of plankton (In Russian)	3704
An ecological study of a pool subject to varying salinity (Swanpool, Falmouth). An introductory account of the topography, fauna and flora	3748
Observations of freshwater ponds on Carroll Island and Gunpowder Neck, Maryland, with emphasis on the zooplankton	3756
An experimental approach to the production dynamics and structure of freshwater animal communities	3794
The daily carbon gains and losses in the seston of Queen Mary Reservoir, England, during 1968	3819
The effect of inorganic sediment on stream biota	3829
On the near-surface plankton of the eastern South Pacific Ocean	3832
A study of the limnetic zooplankton of five flood control reservoirs	3833
Interspecies conflict in estuarine copepods	3834
Shrimps in relation to oxygen depletion and its ecological significance in a polluted estuary	3835
Effects of freshwater microfauna	3836
A mathematical analysis of the niches of Lake Michigan zooplankton	3838
Natural chelators—an indication of activity with calanoid copepod Euchaeta japonica	3840
Population dynamics of selected zooplankton in three oligotrophic Oregon lakes	3841
Productivity studies at Loch Leven (a shallow nutrient rich lowland lake)	3842
Abundance of marine phytoplankton in surface films: a method of sampling	3849
Biological productivity of the Rybinsk Reservoir	3851
Micro-habitat pH differences from those of the surrounding water	3859
Biological productivity of the main communities of the Red Lake	3862
Production in several Mazurian lakes	3873
Friction reduction by algal and bacterial polymers	3876
Plankton population structure in the lower Coeur d'Alene River, delta, and lake	3884

d. Zooplankton (Continued)

Production of phytoplankton and zooplankton in Canadian Shield lakes	3887
Plankton productivity studies in Lake St. Clair	3895
Effects of chemicals on aquatic life	3930
Nutritive quality of food in ecological systems	3983
The effect of a power plant on the distribution and abundance of zooplankton near the plant's thermal outfall	3985
Intrazooplankton predation by <i>Mesocyclops edax</i> at natural prey densities	3988
Species diversity and water quality in Galveston Bay, Texas	3989
The reproductive potential of copepods in brackish water	3994
Energetics and population dynamics of Diaptomus gracilis	3997
Grazing and ingestion rates of nauplii, copepodids and adults of the marine planktonic copepod Calanus helgolandicus	4004
Food quality and zooplankton nutrition	4007
Coexistence of species of Acartiidae (Copepoda) in the Cochin Backwater, a monsoonal estuarine lagoon	4010
Phytoplankton kinetics in a subtropical estuary: Eutrophication	4019
Plankton as indicators of pollution in New York waters	4027
Seasonal cycles of net plankton in a cold tailwater and a natural stream in the State of Arkansas	4029
A computer-simulation study of predator-prey relationships in a single-state continuous-culture system	4073
Environmental changes produced by cold water outlets from three Arkansas reservoirs	4105
A hydrobiological study of the polluted River Lieve (Ghent, Belgium)	4107
Acid mine pollution effects on lake biology	4114
Ingestion, assimilation, survival, and reproduction by Daphnia pulex fed seven species of blue-green algae	4142
The effect of temperature on the development of resting eggs of Diaptomus oregonensis Lillj (Copepoda: Calanoida)	4148
Size relations of the filtering area of two Daphnia species	4152
Freshwater ecology in the Mato Grosso, central Brazil. II. Associations of Cladocera in meander lakes of the Rio Suia Missu	4155
Freshwater ecology in the Mato Grosso, central Brazil. III. Associations of Rotifera in meander lakes of the Rio Suia Missu	4156
An <i>in situ</i> method for the measurement of zooplankton grazing rates	4157
Depth distribution of the carotenoid pigments and lipids of some oceanic animals. 1. Mixed zooplankton, copepods and euphausiids	4159

Zooplankton (Continued) d. Incorporation of 32P4 directly taken up into acid-soluble phosphates 4161 Species diversity of net zooplankton and physicochemical conditions in Keystone Reservoir, Oklahoma The fertilization of Great Central Lake. II. Zooplankton standing 4163 stock Symposium on planktonic organisms as biological indicators of their 4174 environment. (Preliminary reports). Plankton in Lake Lilla Ullevifjarden, eastern Sweden. (In Swedish 4176 with English abstract) Pollution controlled changes in algal and protozoan communities 4179 4181 Nutrients and phytoplankton in Lake Washington Benthos e. Procedures for determining the effects of dredged sediments on 3520 biota-benthos viability and sediment selectivity tests The excretion of ammonia and urea by Mya arenaria L. (Mollusca: 3537 Bivalvia) Productivity and utlization of food energy by benthonic biocoenoses 3557 in two northern lakes. (In Russian) Defecation rate of three tubificid oligocaetes found in the sediment 3559 of Toronto Harbour, Ontario Zoobenthos of 15 lakes in the Experimental Lakes Area, Northwestern 3567 Ontario Pontoporeia affinis (Crustacea, Amphipoda) in the straits of 3568 Mackinac region 3569 The oligochaete fauna of Green Bay, Lake Michigan Classification and ordination of benthic samples from Bedeque Bay, 3570 an estuary in Prince Edward Island, Canada The littoral benthic fauna of Lake St. Louis near Montreal (Quebec).3572 I. Some general data (In French with English summary) Differences in abundance of benthos and reliability of its assess-3578 ment in several lake habitats Subsurface and surface sampling of benthic invertebrates in two 3579 The effects of varying concentrations of nutrients, chlorinity, 3580 and dissolved oxygen on polychaetous annelids A survey of the bottom fauna in lakes of the Okanagan Valley, 3581 British Columbia A study of the benthos of soft bottoms, Sek Harbour, New Guinea, 3584 using numerical analysis Interactions between some tubificid oligochaetes and bacteria found 3590 in the sediments of Toronto Harbour, Ontario The periphyton of the submerged macrophytes of Mikolajskie Lake 3593

e. Benthos (Continued)

Standing crops and primary productivity of the epipelon of two small ponds in North Somerset, U. K.	3598
Distribution of selected metals in bottom sediments, water, clams, tubificid annelids, and fishes of the middle Illinois River	3643
Sampling and measurement in the aquatic environment	3674
Spring and summer Chironomidae of University Lake, Chapel Hill, North Carolina	3678
Studies on the spatial heterogeneity of shallow water benthos with particular reference to the Chironomidae	3684
Differences in benthos upstream and downstream of an impoundment	3687
I. Measurements of pollution effects on living organisms. Bioassays to determine allowable waste concentrations in the aquatic environment	3690
Mollusks and benthic environments in Hillsborough Bay, Florida	3692
Effects of organic enrichment on benthic fauna in a tidal river	3693
An ecological study of a pool subject to varying salinity (Swanpool, Falmouth). An introductory account of the topography, fauna and flora	3748
The free amino acids in the sediments of Toronto Harbor	3784
Bottom deposits	3789
An experimental approach to the production dynamics and structure of freshwater animal communities	3794
Dry weight of the macrobenthos as an indicator of eutrophication of the Great Lakes	3824
A simple method for the biological assessment of the effects of waste discharges on aquatic bottom-dwelling organisms	3825
Formulation of a synthetic seawater for bioassays with <i>Mytilus</i> edulis embryos	3826
Phytoplankton ingestion by the fingernail clam, Sphaerium trans- versum (Say), in pool 19, Mississippi River	3828
Species diversity of benthic macroinvertebrates in three Michigan streams	3830
Qualitative and quantitative analysis of the micro-benthic fauna of five Great Plains reservoirs	3839
Productivity studies at Loch Leven (a shallow nutrient rich low-land lake)	3842
Distribution of freshwater triclads (Playthelminthes: Turbellaria) in central-southern Ontario	3844
Organic life in the Delta-Mendota Canal, California	3848
Abundance of marine phytoplankton in surface films: a method of sampling	3849

e. Benthos (Continued)

A feasibility study using conservation webbing as an artificial substrate in macrobenthic studies	3850
Stream faunal recovery after manganese strip mine reclamation	3856
Ecological studies on chironomids in Lake Suwa	3858
Biological productivity of the main communities of the Red Lake	3862
Productivity problems of freshwaters	3875
Effects of chemicals on aquatic life	3930
Species diversity and water quality in Galveston Bay, Texas	3989
Ecological factors in Jamaica Bay	3991
Comparison of some species importance values and ordination techniques used to analyse benthic invertebrate communities	3992
A numerical analysis of changes in the soft-bottom fauna along a transect across False Bay, South Africa	3993
The classification and ordination of shallow-water benthic samples from Prince Edward Island, Canada	3995
Benthic fauna and sediments in the newly created Lake Kariba (Central Africa)	3999
A preliminary investigation of bottom fauna and invertebrate drift in an unregulated and a regulated stream in Alberta	4006
Biological monitoring of the effluent from a large chemical works in a river which has sources of pollution upstream	4072
A multivariate statistical approach to the Hutchinsonian niche: Bivalve molluscs of central Canada	4075
Diverse: A Fortran IV program to calculate diversity indices of stream and bottom organisms	4079
Environmental changes produced by cold water outlets from three Arkansas reservoirs	4105
The oxygen uptake demand of resuspended bottom sediments	4112
Acid mine pollution effects on lake biology	4114
The recovery of damaged streams	4146
An empirical biotic index of the quality of water in South African streams and rivers	4147
A preliminary survey of the benthic macrofauna and sediments in Lochs Etive and Creran, sea-lochs along the west coast of Scotlan	4154 d
The distribution and ecology of the interstitial meiofauna of a sandy beach at Whitsand Bay, East Cornwall	4158
A quantitative sampler for aquatic phytomacrofauna	4165
The benthic macrofauna of Moriches Bay, New York	4171
Gregarious setting in the American oyster Crassostrea virginica Gmelin: 1. Properties of a partially purified "setting factor"	4173

f. Fish

Toxicity and oxygen demand of decaying bark	3531
Copper/bicarbonate equilibria in solutions of bicarbonate ion at concentrations similar to those found in natural water	3533
Fish species diversity indices as indicators of pollution in Galveston Bay, Texas	3560
An estimation of the minimum level of dissolved oxygen in water required for normal life of fish	3571
Effects of long-term exposures to copper on survival, growth, and reproduction of brook trout (Salvelinus fontinalis)	3574
Effects of increased temperature on cold-water organisms	3582
Distribution of selected metals in bottom sediments, water, clams, tubificid annelids, and fishes of the middle Illinois River	3643
The chemical states of copper in polluted fresh water and a scheme of analysis to differentiate them	3648
Effect of John Day Dam on dissolved nitrogen concentrations and salmon in the Columbia River, 1968	3650
Quantification of the effects of rate of temperature change on aquatic biota	3686
Measurement of pollutant toxicity to fishIII. Sublethal effects and "safe" concentrations	3688
I. Measurements of pollution effects on living organisms. Bioassay to determine allowable waste concentrations in the aquatic enviro ment	
Nighttime artificial aeration of Puddingstone Reservoir, Los Angeles County, California	3717
Experimental criteria for studying grass carp feeding in relation to weed control	3726
An experimental approach to the production dynamics and structure of freshwater animal communities	3794
The effect of inorganic sediment on stream biota	3829
Alterations in oxygen consumption by bluegills exposed to sub- lethal treatment with copper	3847
Abundance of marine phytoplankton in surface films: A method of sampling	3849
Stream faunal recovery after manganese strip mine reclamation	3856
Aquatic biology and the pulp and paper industry (Report No. 2)	3929
Effects of chemicals on aquatic life	3930
Comparison of mercury levels in an oligotrophic and a eutrophic lake	3932
Nutritive quality of food in ecological systems	3983
The age and growth of the largemouth bass <i>Micropterus salmoides</i> (Lacepede), in a thermally loaded reservoir	3987

f. Fisl	n (Continued)	
		3989
		4008
		4105
	Acid mine pollution effects on lake biology	4114
		4144
		4146
		4217
Models	of aquatic ecosystems	
	sical	
4	Wind driven lake circulation by the finite element method	3608
	Future levels of tritium in the Great Lakes from nuclear power production	3609
	Reaeration measurements in anestuary	3610
	Turbulence in Lake Huron	3632
	Documentation report FWQA dynamic estuary model	3707
	Wind-generated circulations in Lakes Erie, Huron, Michigan and Superior	3709
	A comparison of computed and measured currents in Lake Superior	3711
	Characteristic features of estuarine circulation as represented in the Mersey Estuary	3758
	A float diffusion study	3759
	A model of the hydrology of the lakes of the Lower Grand Coulee, Washington	3896
	Circulation patterns and a predictive model for pollutant distribu- bution in Lake Erie	3897
	Digital computer simulation of the ecosystem of Lake Dal'nee	3898
	The dynamic simulation of unsteady frictional flow in tidal estuaries	4071
	Pollution potential of some New Hampshire lakes	4074
	The mathematical modeling of a stratified estuary	4076
	Development of a mathematical model to predict the role of surface runoff and groundwater flow in overfertilization of surface water	4077 s
	Environmental simulation as a tool in marine waste disposal study of Jamaica Bay	4078
	Optimal estuarine water quality management	408
	Water quality analysis for the New York Harbor complex	408
	A diffusion model for Green Bay, Lake Michigan	421

5.

a. Phys	sical (Continued)	
	Ecologic simulation for aquatic environments	4213
	Continuous system models of oxygen depletion in a eutrophic reservoir	4215
b. Chen	nical '	
	Nutrient management in the Potomac Estuary	3545
	Time varying mathematical model for water quality	3566
	Identification of mathematical models for DO and BOD concentra- tions in polluted streams from noise corrupted measurements	3708
	Assessment of surface water quality by a single index of pollution	3777
	A model of the hydrology of the lakes in the Lower Grand Coulee, Washington	3896
	Effects of oxygen demand on surface reaeration	3934
	Eutrophication and the oxygen economy of strams	3935
	Development of a mathematical model to predict the role of surface runoff and groundwater flow in overfertilization of surface waters	4077 s
	Optimal estuarine water quality management	4080
	Water quality analysis for the New York Harbor complex	4081
	Biological and chemical submodels	4082
	Mathematical modeling of nutrient transport	4122
	Ecologic simulation for aquatic environments	4213
	Continuous system models of oxygen depletion in a eutrophic reservoir	4215
c. Biol	ogical	
	A study of the benthos of soft bottoms, Sek Harbour, New Guinea, using numerical analysis	3584
	Statistical model for the selection of unicellular algal strains by the rate of increase in numbers. (In Russian with English summary)	3710
	Shrimps in relation to oxygen depletion and its ecological significance in a polluted estuary	3835
	Effects of freshwater microfauna	3836
	A mathematical analysis of the niches of Lake Michigan zooplankton	3838
	The distribution and net productivity of sublittoral populations of attached macrophytic algae in an estuary on the Atlantic Coast of Spain	3872
	Digital computer simulation of the ecosystem of Lake Dal'nee	3898
	A mathematical model of water quality in an impundment	3899
	A model of nutrient-limited phytoplankton growth	3947
	Comparison of some species importance values and ordination techniques used to analyse benthic invertebrate communities	3992

c. Biological (Continued)

	A numerical analysis of changes in the soft-bottom fauna along a transect across False Bay, South Africa	3993
	The classification and ordination of shallow-water benthic samples from Prince Edward Island, Canada	3995
	Bioluminescence and phytoplankton successions in Bahia Fosforescent Puerto Rico	e, 405
	Biological monitoring of the effluent from a large chemical works in a river which has sources of pollution upstream	4072
	A computer-simulation study of predator-prey relationships in a single-state continuous-culture system	4073
	A multivariate statistical approach to the Hutchinsonian niche: Bivalve molluscs of central Canada	4075
	Diverse: A Fortran IV program to calculate diversity indices of stream and bottom organisms	4079
	Biological and chemical submodels	4082
	A kinetic model of phytoplankton growth, and its use in algal control by reservoir mixing	4092
	Nutrient flux in estuaries	4132
	Ecological niches of sympatric phytoplankton species	4190
	Ecologic simulation for aquatic environments	4213
	Clarifying a production model	4214
d.	Systems	
	Water quality analysis for the New York Harbor complex	4081
	Ecological and systems planning for the Great Lakes	4212
	Ecologic simulation for aquatic environments C. TECHNOLOGICAL CONTROLS	4213
1.	Harvesting	3502
	Water quality problems in Dane County, Wisconsin	3616
	Eradication and utilization of water hyacinth	3712
	A preliminary bibliography on the utilization of sewage in fish culture	
	Screw press design parameters for dewatering water hyacinth (Eichhornia crassipes)	3714
	Resume of studies and control of eurasian watermilfoil (Myrio-phyllum spicatum L.) in the Tennessee Valley from 1960 through 1969	3730
	Phytochemical, pharmacological and antimicrobial screening of Minnesotan aquatic plants	3852
	Physical processing characteristics of some aquatic macrophytes as related to mechanical harvesting	3900

1. Harvesting (Continued)	
Aquatic forage processing in Florida	3901
Seasonal changes in the proximate composition of some common aquatic weeds	3903
Removal of nitrate by an algal system	3906
Nutrient removal by water hyacinth	3914
Variation in the elemental content of Eichhornia crassipes	3986
The distribution and control of macrophyte biomass in Lake Wingra	4002
Pharmacological testing of blue-green algae for constituents having therepeutic value	4095
Improving surface water conditions through control and disposal of aquatic vegetation. Phase I: Processing aquatic vegetation for improved handling and disposal or utilization	4220
Control of water milfoil in Wisconsin	4223
Economic aspects of algae	4224
2. Dredging	
Nitrogen and carbon distribution in sediment cores of selected Wisconsin lakes	3910
Inland lake dredging evaluation	3913
Water quantity and quality studies of Vancouver Lake, Washington	4096
3. Nutrient inactivation/precipitation	
Implications of microbial polymer synthesis in waste treatment and lake eutrophication	3715
Algal removal by alum coagulation	3725
Fractionation of inorganic phosphate in calcareous lake sediments	3733
Kinetics of orthophosphate removal from aqueous solutions by activated alumina	3735
Horseshoe Lake: Nutrient inactivation by chemical precipitation	3918
4. Diversion of nutrients	
Water quality problems in Dane County, Wisconsin	3502
Poultry pollution: Problems and solutions	3617
The prevention of pollution in estuaries	3740
Agricultural pollution of the Great Lakes basin	3786
Report on the effects of the discharge of the Madison Metropolitan Sewerage District's waste water effluents on the Badfish Creek, Yahara and Rock Rivers	3911
The condition of lakes and ponds in relation to the carrying out of treatment measures	3927
ABCs of cultural eutrophication and its control: Part 2	3973

Diversion of nutrients (Continued)	
How Seattle beat pollution	4227
Algicides and herbicides	
Water quality problems in Dane County, Wisconsin	3502
Effects of long-term exposures to copper on survival, growth, and reproduction of brook trout(Salvelinus fontinalis)	3574
The nuisance algae: Curiosities in the biology of planktonic blue-green algae	3606
Eradication and utilization of water hyacinth	3616
Tolerance of blue-green algae to pesticides	3705
Growth inhibitors produced by the green algae (Volvocaceae)	3718
Toxicity of selenium to the blue-green algae, Anacystis nidulans and Anabaena variabilis	3721
Some ecological effects on the use of Paraquat for the control of weeds in small lakes	3722
Aquatic weed control in fish ponds with chemical methods	3723
Chlorination of odorants from algal blooms	3728
Developments in the use of herbicides for the control of aquatic macrophytes	3729
Resume of studies and control of eurasian watermilfoil (Myrio-phyllum spicatum L.) in the Tennessee Valley from 1960 through 1969	3730
Herbicidal treatment effect of 2,4-D on carbohydrate levels of alligatorweed	3731
Alterations in oxygen consumption by bluegills exposed to sublethal treatment with copper	
Striking the balance	3908
Resemblance of growth substances to metal chelators with respect to their actions on duckweed growth	4003
Growth response of blue-green algae to Aldrin, Dieldrin, Endrin, and their metabolites	4014
Algal bioassay potential primary productivity studies on the lower St. Louis River, Minnesota	4038
Characterization of the protein from gas-vacuole membranes of the blue-green alga, Microcystis aeruginosa	4039
Development of toxicity test procedures for marine phytoplankton	4061
A preliminary investigation of a potential new algicide	4086
Potential algicides for the control of algae	4087
Response of aquatic plants to combinations of Endothall and copper	4094
Effect of mercury on algal growth rates	4185

5.	Algicides and herbicides (Continued)	
	Studies on effects of certain quinones. II. Photosynthetic incorporation of $^{14}{\rm CO}_2$ by Chlorella	4210
	Herbicidal control of aquatic plants	4218
	Control of water milfoil in Wisconsin	4223
6.	Biological agents	
	Bacteria, carbon dioxide, and algal blooms	3600
	Eradication and utilization of water hyacinth	3616
	Recent decline in the distribution and abundance of eurasian milfoil in Chesapeake Bay	3673
	Experimental criteria for studying grass carp feeding in relation to weed control	3726
	Bacterial pathogens of freshwater blue-green algae	3865
	Distribution of blue-green algal viruses in various types of natural waters	3889
	Aquatic plant communities in Lake Butte des Morts: Phase 2. Effects of higher aquatic plants, marsh water and marsh sediments on phytoplankton	3890
	Algicidal nonfruiting Myxobacteria with high G + C ratios	4009
	Are some bacteria toxic for marine algae?	4015
	Ecological control of microbial imbalances	4169
7.	Artificial circulation/aeration	
	Eutrophication in relation to water supplies	3607
	Oxygen regeneration of polluted rivers: The Delaware River	3611
	Nighttime artificial aeration of Puddingstone Reservor, Los Angeles County, California	3717
	Effects of contaminants on reaeration rates in river water	3719
	Quality improvements by reservoir aeration	3724
	Alternative oxygenation possibilities for large polluted rivers	3732
	An artificial alteration of the seasonal cycle of the plankton diatom <i>Melosira italica</i> subsp. subarctica in an English lake	3881
	A kinetic model of phytoplankton growth, and its use in algal control by reservoir mixing	4092
	Aeration of oxygen-deficient impoundment releases	4093
	Direct field determinations of the natural reaeration coefficient by frequency response analysis	4113
	Natural carbon sources, rates of replenishment, and algal growth	4198
	The effects of artificial aeration on lake ecology	4217
	Optimum mechanical aeration systems for rivers and ponds	4219

3. Dilution/flushing

9. Nutrient

, 140,111,9	
Aerial photographic tracing of pulp mill effluent in marine waters	3508
Diffusion of sewage effluent from ocean outfall	3511
Interpretation of results from the studies of pollution of surface flowing waters	3525
Evaluation of waste dispersion in estuaries using fluorescent tracer dye	3630
Wastewater loading guidelines for the Grand River basin	3713
A float diffusion study	3759
Some factors influencing dispersion of pollutants in streams	3765
Water quality control through flow augmentation	3902
The dilution of an undersea sewage cloud by salt fingers	3905
ABCs of cultural eutrophication and its control: Part 2 Wastewaters	3973
Outfall simulation experiment in Lake Ontario	4090
Water quantity and quality studies of Vancouver Lake, Washington	4096
Effects of low nutrient dilution water and mixing on the growth of nuisance algae	4216
removal from waste waters	
Phosphates in surface waters and detergents	3555
Phosphate extraction process	3612
Hello, lagoongoodbye, pollution	3613
The control of eutrophication	3614
Population description of a denitrifying microbial system	3615
A farm scale dairy waste disposal system	3618
Proceedings of the conference in the matter of pollution of Lake Michigan and its tributary basin, March 23-25, 1971, Chicago, Illinois	3625
Sorption of soluble phosphates by freshwater sediments in the Huron River basin, Michigan	3661
A preliminary bibliography on the utilization of sewage in fish culture	3712
Implications of microbial polymer synthesis in waste treatment and lake eutrophication	3715
The control of pollution from boating activities	3716
Chemical processes for phosphate removal	3720
Algal removal by alum coagulation	3725
Microbial release of soluble phosphate in an activated sludge environment	3727
Field tachniques for removing nitrates from drainage water	3734

9. Nutrient removal from waste waters (Continued)

Kinetics of orthophosphate removal from aqueous solutions by activated alumina	3735
Summary statement of Potomac Estuary water quality studies for the December 8 and 9, 1970 progress meeting of the Potomac Metropolitan Area Enforcement conference	3738
Onondaga Lake study	3754
Agricultural pollution of the Great Lakes basin	3786
Control of nitrogen from animal wastewaters	3807
Phytoplankton energetics in a sewage treatment lagoon	3893
Characteristics of separated storm and combined sewer flows	3904
The disposal of agricultural waste	3907
Physical considerations for the location of septic disposal systems	3909
The logic of nutrient removal	3912
Phosphorus removal with pickle liquor in an activated sludge plant	3915
Detergents. A status report	3916
Phosphorus removal and disposal from municipal wastewater	3917
You can get federal funds to control feedlot runoff: How two livestock men used runoff control funds	3919
Sewage disposal from pleasure boats	3920
Strategies for control of man-made eutrophication	3922
Inorganic fertilizer and phosphate mining industries - water pollution and control	3942
Manure transformations and fate of decomposition products in water	3967
Effects of secondary and tertiary wastewater effluents on algal growth in a lake-river system	3968
Livestock operations and field-spread manure as sources of pollutan $% \left(1\right) =\left(1\right) \left(1\right)$	ts 39
A computer simulation study of predator-prey relationships in a single-state continuous-culture system	4073
Development of a mathematical model to predict the role of surface runoff and groundwater flow in overfertilization of surface waters	4077
A survey of household waste treatment systems	4083
Effects of surface runoff on the feasibility of advanced municipal waste treatment	4084
Animal waste utilization for pollution abatement - technology and economics. Phase I.	4085
Principles of nutrient control for agricultural wastewaters	4088
Animal waste management to minimize pollution	4089
The logic of nutrient removal	4091

9.	Nutrient removal from waste waters (Continued)	
	Nutrients and eutrophication: The limiting-nutrient controversy	4117
	Phosphorus in wastewater effluents and algal growth	4136
	Recovery of phosphates and metals from waste phosphate sludge by reduction-sinter processes	4139
	The temperature dependency of biological denitrification	4150
	Wastewater treatment and eutrophication	4222
	Pollution of the navigable waters of Dade County, Florida, and tributaries, embayments and coastal waters	4226
	How Seattle beat pollution	4227
	Nutrient management in the Potomac Estuary	4229
10.	Land and waste management	
	Effects of land management on quantity and quality of available water	4120
	Effects of agricultural discharges into freshwater lakes	4135
	The detergent puzzle. What can you believe?	4221
	Controversy is growing over fertilizer runoff	4225
	D. INSTITUIONAL CONTROLS AND MANAGEMENT PROGRAMS	
1.	Governmental controls	
	a. Land use regulation	
	Legal aspects of water use and control in South Carolina. Part B. South Carolina lakes and ponds: A study of public and private rights therein	3620
	Review of the Federal Water Quality Administration estuarine study findings	3739
	Legal aspects	4097
	b. Water quality criteria	
	Proceedings of the conference in the matter of pollution of Lake Michigan and its tributary basin, March 23-25, 1971, Chicago Illinois	3625
	Proceedings of the conference in the matter of pollution of the interstate waters of Long Island Sound and its tributaries - Connecticut-New York	3626
	Control of estuarine pollution	3737
	Chemistry of natural waters VI.	3774
	Legal aspects	4097
	c. Use of nutrient materials	
	F.T.C. phosphate hearing heats up	3540
	Water quality in relation to farm use of fertilizer	3552
	The control of pollution from boating activities	3716

c. Use of nutrient materials (Continued)	
The influence of cropping patterns, soil management, and fertiliz on nitrates	er 3780
Rural sources of nitrates in water	3797
Control of nitrogen from animal wastewaters	3807
Physical considerations for the location of septic disposal syste	ms 3909
You can get federal funds to control feedlot runoff: How two livestock men used runoff control funds	3919
Sewage disposal from pleasure boats	3920
Strategies for control of man-made eutrophication	3922
Leaves as a source of phosphorus	3946
Nutrient sources for Lake Wingra, Madison, Wisconsin	3965
Animal waste management to minimize pollution	4089
The logic of nutrient removal	4091
Legal aspects	4097
Fertilizer management for pollution control	4098
Government reversal on phosphate detergents	4099
Detergents: Nutrient considerations and total assessment	4123
The detergent puzzle. What can you believe?	4223
Controversy is growing over fertilizer runoff	4225
2. Social and economic controls	
Public perceptions of water quality	3619
A water resourcewater supply study of the Potomac Estuary	3799
You can get federal funds to control feedlot runoff: How two livestock men used runoff control funds	3919
Ecology and environmental sanitationthe phsphate controversy	392
Government reversal on phosphate detergents	4099
The detergent puzzle. What can you believe?	422
The effect of ecologically relevant information on detergent sale	es 4228
3. Regional management programs	
Minnesota's lakeshore, resources, development, policy needs, Part I.	373
Control of estuarine pollution	373
Summary statement of Potomac Estuary water quality studies for the December 8 and 9, 1970, progress meeting of the Potomac Metropolitan Area Enforcement conference	3738
Review of the Federal Water Quality Administration estuarine study findings	3739
The prevention of pollution in estuaries	3740

3. Regional management programs (Continued)

Water pollution in the Great Lakes basin	3925
Water quantity and quality studies of Vancouver Lake, Washington	4096
Groundwater flow system analysis in lake environments, with management and planning implications	4100
Ecological and systems planning for the Great Lakes	4212
Pollution of the navigable waters of Dade County, Florida, and tributaries, embayments and coastal waters	4226
How Seattle beat pollution	4227
N twist memory in the Potenge Fetuary	4229

AUTHOR INDEX

Aalto, Johan A 3649	3738	Ball, D. G		4071
Aasa, Rolf	4176	Ballinger, D. G		3515
Aboaba, F. O	3900	Banerji, Shankha K		3635
Abraham, S	4011	Bank, Harvey		3908
Abrams, J. P	39 30	Barlowe, W. C		4094
Adams, Jr., Charles E	3507	Barnes, R. D		4070
Adams, Franklin S	4141	Barnes, R. S. K		3748
Adriano, D. C	4118	Barnett, J. T. Jr		4127
Ahrnsbrak, W. F 3757	4211	Barrett, J		4013
Albertson, Orris E	3612	Barrow, Ronald L		3596
Albin, R. C	39 78	Bartsch, A. F		3742
Aldrich, S. R	3780	Batoosingh, E		3784
	3557	<u> </u>		4014
Alimov, A. F		Batterton, J. C		
Allen, George H	3712	Bauer, Armand		3538
Allen, Harold L 3860	4175	Bauer, J. A		3537
Allen, J. A	3537	Baumann, E. Robert		4084
Alley, Wayne P	3824	Bayen, M		4053
Allison, David E. 3817 3933	39 37	Bayley, Suzanne		3673
Amundson, Rohel	3804	Beak, T. W		4072
Anderson, John L	3861	Bechtel, Timothy J	3560	39 89
Anderson, R. Stewart	3558	Beeton, A. M 3520	3569	3633
Andrew, T. E	3819	Beiningen, Kirk T		3650
Andronikova, I. N	3862	Beisl, Elizabeth		3998
Annett, C. S	39 32	Bellinger, E. G	3592	3607
Antczak, E	3587	Bennet, James P		3516
Appleby, A. G	3559	Benoit, D. A		3574
Appleby, R. S	4011	Bentley, Eugene		3804
Apts, C. W	4061	Berg, R. H		4112
Armitage, Kenneth B 3767	3980	Berland, B. R		4015
Armstrong, D. E 3546	3666	Bertru, Georges		3768
3733 3939	3940	Beuscher, D. B		3725
Armstrong, F. A. J 3634	3702	Beyers, Robert J		3782
Armstrong, J. M	4212		3674	4096
Armstrong, Neal E	3991	Bhattathiri, P. M. A		4051
Armstrong, Richard	3781	Biggley, W. H		4056
Arnold, Dean E 3621	4142	Biggs, Robert B	3654	4119
Arthur, Don R	3835	Bingham, F. T		3943
Attoe, O. J	3797	Bishop, John W		3561
a a d	3941	Bishop, S. E.		4118
Ayyakkanu, K	3341	Bitzky, Margaret R		4153
Page Mary	2612			3944
Baer, Max	3613	Black, C. A		
Bagge, Pauli	3863	Black, S. A		3651
Bagnall, L. O	3901	Blackburn, Robert D		3675
Bahnick, Donald A	3513	3731	3903	4094
Baier, Robert E	3514	Blahm, Theodore		3582
Bailey, James	4083	Bliss, L. C		3855
Baker, A. L	4012	Bloom, S. A		4143
Baker, Robert A	3591	Boatman, D. G		3990

Boddington, M. J	3844	Buzzell, James C. Jr	4194
Bone, Derek H 4016	4017		
Bonin, D. J	4015	Cairns, John Jr 3825	3859
Borchardt, Jack A	3783	4146	4179
Born, S. M	3918	Callender, Edward	3815
Bortleson, Gilbert C	4109	Campbell, Robert S	3945
Boszormenyi, Z	3953	Canelli, Edmondo	4124
Boughton, Walter C	4120	Cannon, R	4057
Boush, G. M	4014	Caperon, John	4019
Bowden, K. F	3758	Carlson, P. R	3763
Bownik, Lucyna Joanna	3593	Carpenter, J. H	4056
Boyd, Claude E	3675	Carr, N. G	4049
3769 3903	3981	Carroll, J	4210
3982 3983	3984	Carter, John C. H	3563
3986 4144	4164	Casselman, T. W	3901
Bowes, Gerald W	4177	Cattel, S. Allen	4019
Bradbury, John P	3749	Cederwall, Klas	3759
Brauer, Garrett A	3985	Chamberlain, Stanley G	3630
Breese, Wilbur P	3826	Chandramohan, D	3941
Breever, P. G.	3636	Chatterjee, Ashim B	3697
Brezonik Patrick L 3743	3755	Chau, Y. K	3770
Brezonik, Patrick L 3743	4145	Chawla, V. K 3770	3818
Brice, Robert M	4203	Chen, Carl W	4213
Briggs, Winslow R.	4047	Chen, Ching-Hong	4022
Brinkhurst, R. O. 3559 3590	3784	Chen, Juan-Lin	3910
Brinkhurst, R. O. 3339 3390	4046	Chen, Min	4124
Brock, Thomas D	4118	Chen, R. L	3961
Brock, W	4127	Cheng, Ralph T	3608
Brockway, D. L 3801	3972	Chesters, Gordon	3910
Broenkow, W. W	4012	Chorney, William	3603
Brook, A. J 3694	4145	Chrost, Ryszard	4166
Brooks, Ralph Jr	4052	Chua, K. E	3784
Brown, Dennis J	4009	Chutter, F. M	4147
Brown, R. Malcolm Jr	3676	Cifuentes, Jaime	3714
Brown, Richard D 3562	4220	Clark, Leo J 3738	3799
Bruhn, Hjalmer D	4111	Cliwicz, Zbigniew M	3677
Brunskill, G. J 3517	4018	Cochran, A. A	4139
Buckland, Barbara	3750	Cole. Dale W	3785
Buckley, Edward H	4216	Cole, Herbert Jr	4141
Buckley, James Arthur	3864	Coleman, David C	4164
Bunt, J. S	3979	Coleman, E	3978
Burbank, N. C		Coler, R. A	3564
Burgess, Fred J	3508	•	4180
Burgis, M. J	3751	Collins, Ralph P	3962
Burns, Richard L	4045	Commoner, Barry	3988
Burris, Robert H	3813	Confer, John L	3763
Burrows, Elsie M	3594		3631
Busacker, Greg	3987	occity but and	3539
Bush, Ronald Michael	4178	Cooke, G. W	3337

Cooke, N. E	4072	Dingman, S. Lawrence	4074
Cooley, John M	4148	D'Itri, F. M	3932
Coombs, J. F	4104	Dittman, Frank W	3611
Cooper, R. M	4072	Dixon, Peter S	3885
Cooper, W. A	39 31	Dodds, D. F	3554
Cooper, William E	3794	Donze, M	4065
Copeland, B. J 3560	3989	Dorey, A. E	3748
Copeland, Richard	3637	Doty, Maxwell S	3701
Corliss, Jane	4020	Dowdy, R. H	3952
Courtright, Robert C	3826	Downing, A. L.	3622
	3926		3862
Coutant, C. C	3946	Drabkova, W. G	4133
Cowen, William		Duffer, William R	
Cox, Geraldine V	3693	Dugan, P. R 3548	3715
Cross, O. E	4085	Dugdale, Richard C	3947
Crossman, John S	4146	Duncan, A	3819
Csanady, G. T	4090	Dunn, I. G	3751
Cummings, T. F	3643	Dunstan, William M	4021
Cunningham, Richard K	3518	Dupuy, J. L	3849
Curds, C. R 4073	4149	Durum, W. H	3519
Curtis, E. J. C 3827	4149	Duthie, J. R	4123
Cushing, C. E	4069	Dykyjova, Dagmar	4151
Daft, M. J	3865	Easley, J. F	3901
Dahnke, W. C	3672	Ebel, Wesley J	3650
David, Elizabeth L	3619	Eckhoff, David W	3991
David, K. A. V	3605	Eckhoff, Russell A	3716
Davidson, Burton	4113	Edgington, H. C	3771
Davies, T. R	3615	Edmondson, W. T 3817	3933
Davis, Edith B	3891	3937 4043	4181
Davis, Ernst M 3752	3866	Eftink, Bill	3919
Davis, Graham J	4167		3760
•		Egan, Walter G	4152
Davis, S	3943	Egloff, David A	3653
Dawson, R. N	4150	Ellis, B. G	
deBruyn, P. J	3792	England, C. B	3532
Deevey, Edward S. Jr	4110	Eppley, R. W	4022
DeFilippi, John A	3904	Erickson, A. E	3653
de Haan, H	3792	Erman, Don C	3992
de Koning, H. W	3595	Evans, M	3840
De Michele, E	4057	Evans, Ralph L 3641 3725	3788
Demmerle, Susanne D	4124	Evens, Frans M. J. C	4107
De Moss, J. A	3831		
Derse, Phillip H	4198	Fairbank, W	4118
Deuser, W. G	4121	Falls, C. Paul	4215
Devassy, V. P	4051	Farlow, John S	3739
deWitt, Wallace III	3787	Farvolden, R. N	3798
Dick, M. W	3565	Fassett, Norman C	39 80
Dickson, Kenneth L 3825	4146	Fast, Arlo W 3717 3932	4217
DiGiano, Francis A	4122	Faulkner, Bobby P	3942
	,		

			3537
Feigner, Kenneth D 3707	3799	Garrett, M. R	3844
Feng, T. H	3789	Gelder, S. R	4026
Fenster, W. E	4098	Gergis, Mahasin S	
Ferguson, John F	3720	Gersper, Paul L	3949
Ferguson, Robert G	3895	Gibbs, C. V	4227
Fernando, C. H 3575	3684	Gieskes, Joris M	3764
Feuillade, J	3541	Gilbert, Jerome B	3737
Field, John G	3993	Gilligan, John	4108
Findenegg, Ingo	4023	Gilligan, R. M	3758
Finogenova, N. P	3557	Gislason, Jeffrey C	3830
Finstein, M. S	4153	Glaser, J. H	3831
Fischer, Hugo B	3905	Godfrey, Paul J	4079
Fitzgerald, George P	3542	Goering, John J 3947	4125
Flemer, David A 3654	4119	Gold, Kenneth	4027
Floodgate, G. D	4001	Goldberg, Marvin C	3950
Florczyk, Halina	3525	Golderman, H. L	3792
Floyd, Bert A	3866	Goldman, Charles R 3753	3781
Foehrenbach, Jack	3623	4034	4126
Foess, G. W	3789	Goldman, Joel C	3655
Fogg, G. E	4054	Goodman, Alvin S	3566
Foree, Edward G	3596	Goodyear, C. Phillip . 3983	4144
Foster, P	4195	Gordon, Robert W	3531
Fox, M. A	3728	Gorham, Eville	3645
Francis, George W	4184	Gorkom, H. J. van	4065
Frea, J. I 3548	3715	Goulder, R	3990
Frederick, Jerome F	4024	Goulding, K. H	4086
Frey, David G	4114	Gowan, Douglas	3907
Friedland, A. O	39.48	Graetz, D. A	3961
Friedman, Irving	3896	Graham, B. W	3517
Fruh, E. Gus 3752	3866	Graham, Jo-Ruth	3886
Fuhs, G. Wolfgang	4124	Granhall, Ulf	4028
Fujita, Dennis K	3781	Gratteau, James C	4087
Fujita, Yoshihiko	4025	Gray, C. B. J	3772
Fullam, Harold T	3942	Gray, John S	4029
Funk, William H	3674	Green, G. H	3894
runk, william it.		Green, J 4155	4156
Gachter, R 3790	3791	Green, Roger H	4075
Gage, John	4154	Green, V. W	3921
Gale, William F	3828	Greeson, Phillip E	3867
Galling, G	4182	Gregory, Constantine	3857
Gallon, J. R	4183	Griffin, Dana G. III	4005
Gammon, James R	3828	Griffiths, Mary	4030
Ganf, G. G	3638	Gross, M. Grant	3521
Gangstad, Edward O	4218	Grub. W	3978
Gangstad, Edward O.	3751	Grundy, Richard	3922
Gank, G. B	3520	Gumerman, R. C	3792
Gannon, John E.	3927	Gunner, H. B	3564
Garaucher, J	4189	Gupta, R. Sen	3522
Garcia, Augusto F			

Gustafson, Philip F	3609	Hergenrader, Gary L 3744	3745
Gutelmacher, B. L	3704	Herricks, Edwin E	4146
		Herring, Peter J	4159
Hajek, Benjamin F	3639	Hertzberg, S	4031
Halfen, Lawrence N	4184	Hestand, R. S. III	39 31
Hall, Donald J	3794	Hickman, G. Daniel	3868
Hall, James D	4186	Hickman, M 3597 3598	3695
Hall, John R	3692	Hidu, Herbert	4173
Hall, Ross W. Jr	3656	Hillbricht-Ilkowska, Anna	3599
Hamilton, Andrew L 3501	3567		3873
Hammer, Mark J 3744	3745	Hines, N. William	4097
Haney, James F	4157	Hirst, Eric	3908
Hannan, Patrick J	4185	Hoare, Derek S	3869
Hansen, Ray S	3543	Hobbs, G. D	4076
Hansmann, Eugene W	4186	Hodgkin, E. P	3834
Hanson, Arthur M	3951	Hoffman, Carl E	4105
Hanson, L. D	4098	Hoffman, D. A	3657
Harmeson, Robert H	3795	Hofmann, Anton	40 32
Harrington, D. W	3827	Hogan, William T	4219
Harris, D. O	3718	Holding, A. J.	3960
Harris, Howard S	3707	Holmgren, S. K	3604
Harris, R. F	3546	Holley, E. R	3934
3666 3733	3940	Holowaychuk, N	3949
Harris, Roger P	4158	Holstead, Bruce W	4095
Harrison, Michael J	3523	Holt, R. F	3952
Harrison, W	3849		3936
	4006	Honick, K. R	4048
Hartland-Rowe, R 3574 Hartley, Jane M	3678		4034
· · · · · · · · · · · · · · · · · · ·	4104	Horne, Alexander J	3513
	4104	Horton, Joseph W	3923
Hastings, J. W	4200	Horvat, Robert	4005
Hattori, Akhiko 3796		Hotchkiss, Arland T	3897
Haystead, A	4187 3519	Howell, John A	4106
Heidel, S. G		Howells, Gwyneth P	
Heinrich, A. K	3832	Howmiller, Richard P	3569
Heip, C	3994	Hoyt, J. W	3876
Heller, F. C	3657	Huddart, Robin	3835
Hellmann, Wolfgang	4199	Hughes, G. M	3798
Hellwig, H. E	3901	Hughes, Roger N 3570	3995
Helm, William T	3992	Hulcher, Bruce S	3727
Helzer, Glen R	3833	Hunding, Carsten	4035
Hem, J. D	3519	Hunter, Joseph V	3608
Hendricks, Charles W	3544	Hunter, V. D	4143
Henion, Karl E	4228	Hynes, H. B. N 3687	3800
Henley, D. E	4207		
Henry, C. J	4227	Ichimura, Shum-ei	3689
Hensler, R. R	3797	Imevbore, A. M. A	3953
Henson, E. B	3568	Ingram, Lonnie O	3869
Herbert, R. A	3960	Itazawa, Yasuo	3571

	2070	Kennedy, O. D	4163
Jackson, Daniel F	3870	Kennedy, R. S	3680
James, Wesley P	3508	Kenney, B. C	3632
Javornicky, Pavel	40 34	Kenney, B. C.	4188
Jaworski, Norbert A 3545	3649	Kenyon, C. N	4189
3738 3799	4229	Kerber, Norma L	4127
Jeffrey, S. W	4013		4227
Jenkins, David	3720	Kersnar, F. J	3901
Jennings, Robert	3591	Kesterson, J. W	3924
Jennings, R. C	4036	Ketelle, Martha J 3909	4101
Jensen, L. D	3836	Keup, Lowell E	3997
Jensen, T. E	4037	Kibby, Harold V	4105
Jewell, William J 3696	3871	Kilambi, Raj V	3802
John, D. M	3872	Kilham, Peter	4128
Johnson, Arthur H	4074	King, Darrell L	3897
Johnson, J. M	4038	Kiser, Kenneth M	
Johnson, Jack D 3588	4077	Klashman, Lester M	3739
Johnson, M. G	3659	Kluesener, John W 3805	3965
Johnson, W. E	3504	Knaggs, F. W	3722
Johnston, R. A	3970	Kobayashi, K	4161
Johnston, William R	3734	Kochsiek, Kenneth A	4162
Jones, D. D	4039	Koegel, Richard G	4220
Jones, Ian S. F	3632	Kohl, Daniel H	3962
Jones, J. G	3679	Kohler, A	3998
Jones, J. G	4132	Kohnke, Helmut	3524
Jones, R. D. H.	3511	Koivo, A. J	3708
Jones, Richard H	4039	Konrad, John G	3910
Jost, Michael 3878	3610	Koob. D. D	4082
Juliano, David W	3010	Kothandaraman, V 3641	3719
	3873	Kozub, G. C	3974
Kajak, Z	4135	Kraaijeveld, H. A	3792
Kaleel, R. T	3954	Krasnick, George	4019
Kalff, J	3874	Kreis, R. Douglas	4133
Kappe, David S	3874	Krenkel, Peter A	3686
Kappe, Stanley E	3925	Krogius, F. V	3898
Karr, M. H	4160	Krokhin, E. M	3898
Kaul, Robert B	3837	Krueger, Hugo	3826
Kaul, V		Krzywicka, Anna	4166
Kaushik, N. K	3800	Kuchcinska, H	3587
Kawai, Akira 3955	3956	Kuentzel, L. E	3600
3957 3975	4172	Kuenzler, Edward J	4129
Keeney, Dennis R 3910	3958	Kulasooreya, S. A	3696
3959 3960	3961	Kulasooreya, S. A	3721
Keirn, Michael A	3996	Kumar, H. D	3821
Kelman, Sheldon	4084	Kunishi, hally h.	4183
Kemp. A. L. W	3772	Kurz, W. G. W.	3862
Kemp, C. L	4040	Kuzmenko, K. N	5002
Kemn H. T.	39 30		3798
Kemp, P. H 3640 3773	3774	Landon, R. A	4186
Kenis, Paul R	3876	Lane, Charles B	7100
Rolling Lucia			

Lane, Patricia A	3838	Ludwig, H. F	3948
Lange, Willy 3877	3963	Lund, J. W. G 3662	3881
Lanza, Guy R 4041	4179	Lund, L. J	3524
Larson, T. E	3795	Lundgren, Alf	4028
LaRue, T. A	4183	Lutz, Ron	3919
Lau, L. S.	3979	Lysyj, I	3644
Laurent, P. J	3927	2,0,1, 1	3044
Laverty, Gordon L	3724	MaaTatawa N C	3849
	4070	MacIntyre, W. G	
Lawley, G. G		Mackay, David W	4108
Lawrence, J. M 3723	3803	Mackenthum, Kenneth M	4101
Lear, Donald W. Jr 3545	3649	MacKenzie, David R	4141
3738	4229	Mackenzie, Fred T	4064
LeBrasseur, R. J	4163	Mackie, G. L	4165
Lee, C. C	3546	MacLachlan, A. J	3999
Lee, G. Fred	3502	MacLachlan, S. M	3999
3509 3542	3553	MacLeod, Robert A	3671
3804 3805	3911	Maestrini, S. Y	4015
3946 3951	3965	Magnin, Etienne	3572
Lee, Thomas N	3511	Magnuson, John J	3985
Leendertse, J. J	4078	Magnuson, Richard W	3588
Legge, Robert F	3806	Malick, James G	3841
Le Grand, Harry E	3964	Malone, Thomas C. 3882 4043	4044
Lehmann, Heiner	3878	Maloney, Thomas E 3968	4192
Lehmusluoto, Pasi 3863 3879	3880		4203
	4111	Malueg, K. W	
Lerman, Abraham		Manczak, Henryk	3525
Lessig, Dennis C	3839	Manny, B. A 3663	4131
Levandowsky, M	4190	Mares, A	3791
Levin, Gilbert V	3601	Marshall, Duane W	3727
Lewin, Joyce	4042	Martens, Dennis W	3531
Lewis, A. G	3840	Martin, Dean F	3697
Lex, M	4191	Martin, W. P	4098
Li, Ting Y	3761	Mason, Curtis C	3843
Liaaen-Jensen, S	4031	Massey, Albert	3966
Liao, Paul B	3660	Mathieson, Arthur C	4045
Lichatowich, J. A	4061	Mathis, B. J	3643
Likens, Gene E	4102	Matsumura, F	4014
Lin, Shunn-Dar 3725	3870	Mattingly, George	3611
Lincoln, James	3661	Matulova, Dragica	3602
Lindgren, William A	3601	Matusiak, Kazimierz	4166
Little, Colin	3748	Mawson, Joseph C	4079
Liu, Henry	3510	McBride, Landy	3603
7.6	4220	McCarty, Perry L	3871
Livermore, Donald F	4088		
		McCombie, A. M	3681
Loftus, M	4056	McCulloch, D. S	3763
Lollar, Anne Q	4164	McDonnell, Archie J 3573	3935
Lombardo, Pio	3899	McDowell, D. M	4071
Lowe, D. S	3762	McElroy, W. D	4056
Lowe, Rex L	3828	McFadden, James T	4212

	4167	Mullis, Michael K	3526
McGahee, Cheryl F	3751	Murata, Norio	4062
McGowan, L. M	3734	Murphy, Garth I	4214
McKeag, John A	3515	Murphy, K. L	4150
McKee, G. D	3574	Murray, Steven	3885
McKim, J. M	3967	Murthy, C. R	4090
McKinney, Ross E	3883	Murty, Tadepallis	3709
McLeod, G. C	4193	Myers, Jack	3886
McMurry, Laura	3838	Tiyers, oden to the	
McNaught, Donald C	3620	Naka, Michiko	4033
Means, David H	3978	Natarajan, K. V	3698
Meenaghan, G. F	3720	Nedwell, D. B	4001
Menar, Arnold B		Neill, William H	3985
Menshutkin, V. V	3898	Nelson, K. H	3644
Menzel, David W	4021	Newman, J. F	3722
Messer, James B	3512	Newton, C. E	3931
Mettrick, D. F	3844	Nichols, B. W.	4011
Michaylova, N. F	3862	Nichols, Stanley A 3846	4002
Micka, Thomas	3934	Nicholson, H. F	3770
Middlebrooks, Joe	3655	Nicholson, Nancy L	4047
Mielczarek, Andrzej	3586	Nielsen, Hubert L	3724
Milburn, T. R	3638	Noda, Hiroyuki 4033	4048
Miller, M. C	3663	Norman, J. D 3912	4091
Miller, William E 3968	4192	North, Barbara B	4060
Milne, R. A	3974	Noven, Bengt	3685
Miner, J. R	3969	Nultsch, Wilhelm	4199
Minter, Robert Jr	3884	Nullock, Williams	
Mitchell, Dee 3808	4194	Oakley, H. Roy	3740
Mitchell, Ralph	4169 3845	O'Connor, Donald J	4081
Mitchell, Richard S		O'Connor, Joel S	4171
Miyata, Hisao	4000 3633	Odlaug, Theron O 3588	4038
Modling, Richard P		O'Hara, James	3847
Moebus, K	4168 3775	Ohmori, M	4200
Moffa, Peter E	3740	Oliver, J	4118
Moir, Ian W. M	4089	Olson, Theodore A	3588
Moore, J. A	3722	Olson, Y. A	4038
Moore, N. W	3868	Oota, Yukito	4003
Moore, Richard B	3842	Oquist, Gunnar	4201
Morgan, N. C	3846	Orlob, Gerald T	4213
Mori, Scott	3523	Oskam, Gijsbert · · · · ·	4092
Morita, Richard Y	4195	Oswald, William J	4103
Morris, A. W	4197	Oud, Adrian J. · · · · ·	3895
Morris, Ian 4196	4162	Overbeck, R. C	3930
Morrison, Robert	3928	Owen, G. E. · · · · · ·	3659
Mortimer, Clifford H	3595	Owens, M. · · · · · · ·	3547
Mortimer, D. C	4198	Ozeretskovskaya, N. G	3704
Morton, Stephen D	4046	0202000000	
Mosser, Jerry L	4040	Paffenhofer, G. A	4004
Mukherjee, Shishir	4000	1 42 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	

Painter, H. A	3809	Rabe, R. W	4069
Palmer, David S	4152	Rabin, Harvey	3673
Paris, Doris F 3801	4127	Radford, D. S 3579	4006
Parsons, T. R	4202	Ragotzkie, Robert A 3711	3757
Patalas, Kazimierz 3682 3683	3699	Raines, G. E	4082
Patel, D. N	39 70	Rajyalakshmi, B	3705
Paterson, C. G 3575	3684	Ramachandran, V	3616
Patouillet, Constance	4185	Ramaprabhu, T	3616
Paulet, Manuel	3524	Ramnarine, A	3840
Pavanello, R	3777	Rand, Myrton C	3775
Pazwash, Normoz	39 34	Randall, Clifford W	3727
Perez, Himerio J	3510	Rao, Desiraju B	3709
Perrott, Pamela S	4030	Rao, V. S	3627
Pesarin, F	3777	Raveed, Dan	4189
Peterson, D. H	3763	Rebhun, M	3728
Peterson, J. O	3918	Reddy, P. V. G. K	3616
Pfister, Robert M	3548	Redfield, Alfred C	3896
3576	3577	Reed, F. Everett	4219
3680	3715	Reichardt, Wolfgang	3811
Phillips, G. R	3708	Reid, George W	3503
Pieczynska, E	3873	Reimold, Robert J	4132
Pierce, Ned D	3913	Reish, Donald J	3580
Piggott, G. H	4049	Remsen, Charles C	3971
Pillai, S. C	4136	Richards, F. A	3972
Pimenova, M. N	3810	Rippingale, R. J	3834
Pine, Roland E	3518	Robie, Donald B	3737
Piper, David Zink	3527	Robinson, A. R	3812
Piskunkova, N. F	3810	Robinson, Gordon G. C	4052
Poltoracka, Jozefa	3700	Robinson, John	3966
Pomeroy, Lawrence R	4132	Robson, T. O	3729
Porcella, Donald B	3655	Rode, A	4053
Potos, Chris	3528	Rogers, Hugo Jr	3914
Povoledo, D	3517	Rohlich, G. A 3939	4222
Powell, H. E	4139	Roubal, Ronald K	3513
Powers, Charles F 3824	4203	Round, F. E	3695
Prakash, G	3721	Roy, V. M	3849
Prati, L	3777	Rumer, Ralph R	3897
Pratt, P. F	4118	Ruschmeyer, O. R	4038
Prejs, Andrzej	3578	Rusness, Donald	3813
Proctor, Donald E 3618	3674	Rybak, Jan Igor 3529	3530
Proctor, Vernon W	4005	nyoung sun agoz i i i i soas	JJ J.,
Prokopovich, Nikola P	3848	Safford, R	4011
Prowse, G. A	3726	Sager, Paul E	3664
Putnam, Hugh D 3511	4145	St. Amant, James A	3717
	12.13	Saito, Y	4161
		Sakamoto, Mitsuru	3665
Qadri, S. U	4165	Salbach, S. E	3976
Qasim, S. Z.	4051	Saloman, Carl H	3692
, , , , , , , , , , , , , , , , , , , ,			2074

		211	4207
Samuel, S	4054	Silvey, J. K	3850
Sanger, Jon E	3645	Simmons, George M. Jr	4143
Santos, Gertrudes A	3701	Simon, J. L	3624
Sargent, David F 4055	4204	Sinha, Evelyn	
Saunders, D. F	4204	Skok, John	3603
Sawada, Tomoji	4172	Skulberg, O. M	4058
Sawyer, Clair N. 3746 3814	3973	Slack, Keith V	3647
Scalf, Marion R	4133	Sless, J. B	3728
Schapova, T. F	4205	Sloey, William E	3890
Schelske, Claire 3646 3815	4134	Smet, Willem H. O. de	4107
Scherfig, Jan	3885	Smith, F. W	3667
Schindler, D. W 3505	3506	Smith, Gordon E	3730
3604 3634 3685	3887	Smith, Ned P	3711
Schindler, James E 3936	4007	Smith, Ronald W	4114
Schofield, Carl L	3823	Smrchek, Jerry C	3756
Schroeder, Edward D	3526	Snyder, George R	3582
Schuldt, Marcus D	4203	Sollo, F. W	3934
Schults, D. W	4203	Soltero, Raymond A	39 38
Sears, James R	4206	Sommerfeldt, Theron G	3974
Seather, Ole A	3581	Sorokin, Constantine	4059
Seckbach, Joseph	3888	Sorokin, Ju. I	3851
Serliger, H. H	4056	Southwick, Charles H	3673
	4198	Spacek, 0	3536
Sernau, Russell	3816	Speakman, James N	3686
Serruya, C	3531	Speece, R. E	4093
Servizi, James A	3943	Spence, J. A	3687
Shade, E	4054	Spencer, D. W	3636
Shah, N. M	4057	Spodniewska, Anna	3599
Shane, Miriam S 3889	3755	Spodniewska, Irena	3599
Shannon, Earl E 3743	3937	Sprague, J. B	3688
Shapiro, Joseph 3817	3948	Srinath, E. G	4136
Shea, T. G	3962	Ssymank, Volker	4208
Shearer, Georgia B	4135	Stadelman, Puis	3688
Sheffield, C. W		Stainton, M. P	3517
Shenton, L. R	4132	Staley, James T	3583
Sheppard, C. C	3617	Stanford, G	3532
Sherwood, Robert J	3612	Starbird, A. W	4219
Shien, Yei-Shong	4113	Starkey, R. S	4115
Shih, C. S	3904	Starkey, R. S	3819
Shiomi, M. T	3818	Steel, J. A. F.	4060
Shiroyama, Tamotsu	4192	Stephens, Grover C	4202
Sholkovitz, Edward R	3764	Stephens, K	4100
Shukla, S. S	3666	Stephenson, David A	3584
Shvytov, I. A	3710	Stephenson, W	4009
Sicko, Linda M	4037	Stewart, James R	3511
Siegelman, H. W	4031	Stewart, Robert E	4191
Siewert, Horst	4008	Stewart, W. D. P. 3865 4187	3648
Sikka, H. C	4210	Stiff, M. J 3533	3703
Silvester, W. B	4191	Stockner, John G 3702	3/03
DIIVEGEEI, III DI			

Stoermer, Eugene F 3646	4134	Tilton, Richard C		3822
Stone, F. T	3548	Timmons, D. R		3952
Strand, J. A	4061	Tischer, R. G		3891
Straskraba, Milan	3585	Toerien, Danie F	3615	3655
Straub, Conrad P	4077	Toetz, Dale W		3669
Stravinskaja, E. A	3862	Tomiyama, T		4161
Strizic, V	3536	Tomlinson, T. E	3550	4138
Strzelczyk, E	3587	Torkelson, R. A		3672
Strzelczyk, Edmund	3586	Touhill, C. J		3925
Stumm, Werner	4137	Tramutt, P. R		3657
Stumm-Zollinger, Elizabeth	4137	Tranter, D. J		4010
Su, Kwei Lee	3852	Trent, Lee		4020
Sugahara, Isao 3955	3956	Truesdale, Victor W		3551
3957 3975	4172	Tucker, Richard J		3566
Sugahara, Kiyoshi	4062	Tung, C		3608
Sugiyama, Motohiko	3957	Turner, D. O.		3618
Sullivan, William T	3706	ruther, b. o		3010
Sutton, David L	4094	Httormark Paul D	302/	4222
Suzuki, Reiko	4025	Uttormark, Paul D	3744	4444
	3588	Wellertone I D	2504	3628
Swain, Wayland R		Vallentyne, J. R		
Swift, Lloyd W. Jr	3512	Van der Valk, A. G.		3855
Syers, J. K 3546	3666	Vardapetyan, S. M		3704
3733	3940	Varga, Louis P		4215
Symons, James M	3820	Vass, K. K		3837
Szabo, E	3791	Veitch, F. P		4173
2.6 10 1 10 1 10 10 10 10 10 10 10 10 10 10		Veith, Gilman D. 3502		3911
Takahashi, Masayuki 3689	4202	Verduin, Jacob		3977
Takamiya, Atusi	4062	Vernon, Leo P		4189
Tamas, I	4210	Vickers, David H	3984	3986
Tarzwell, C. M	3690	Viets, Frank G. Jr		3552
Tash, Jerry C	3691	Vijayaraghavan, Sumitra		3892
Taudzuki, Takahiko	4003	Villa, Orterio J	3545	4229
Taylor, Alan W 3532	3821	Viner, A. B		3751
Taylor, C. P. S 4055	4204	Vivier, P		3927
Taylor, John L	3692	Vollenweider, R. A		3770
Templeton, W. L	4061	Vollrath, H		3998
Terkeltoub, Richard W	3549	Vozzhinskaya, V. B		4205
Terry, R. D	3976			
Tews, Leonard L	3589	Wada, Eitaro		3796
Thodos, George	3735	Wagner, D. F		3554
Thomas, J	3605	Wagner, John F		3670
Thomas, J. P	4063	Waite, Thomas D		3857
Thomas, Martin L. H 3570	3995	Walkup, Robert		3869
Thompson, John F	3667	Wall, J. P		3918
Thompson, T. W	4223	Wallen, D. G.		3894
Thomson, Norma S	3853	Wallman, Harold		4083
Thorstenson, Donald C	4064			4003
Thurston, E. Larry	3869	Walsby, A. E		3788
murscon, E. Larry	3009	Wang, Wun-Cheng	3706	3/00

	1200	Winchester, John W	3535
Ward, Patricia Boyd	4209	Winfield, Avis	3850
Waters, R. F	4139		3735
Wavre, M	3590	Winkler, Barry F	3895
Way, J. M	3722	Winner, John M	3918
Weaver, P. J	3555	Wirth, T. L	4162
Webster, Dwight A	3823	Withm, Jerry L	4069
Weeter, Dennis W	3573	Wolf, E. G	
Weiss, Charles M	3556	Wolff, E	4182
Welldon, L. W	3731	Wolman, M. Gordon	3747
Wells, D. M	3978	Wood, Kenneth G	3778
Wenderoth, Sondra	3766	Woodward, John B. III	3920
Wentworth, J. W	4040	Wright, Richard T	3523
Werner, Dietrich 4066 4067	4068	Wu, Jin	3765
Werner, Earl E	3794	Wuhrmann, K	4116
West, Lloyd E	3554	Wyatt, J. T 4070	4207
Wetzel, R. G 3663	4140		
Whipple, William Jr 3611	3732	Yamagishi, Hiroshi	3858
White, E	4115	Yen, Chin-lien	3765
White, Lloyd A	3671	Yentsch, Charles 4196 4197	4206
Whitehouse, John W	3629	Yentsch, Clarice M 4196	4197
Whitley, James R	3945	Yongue, William H. Jr	3859
Wiedeman, Varley E	4224	Yost, Edward	3766
Wildlung, Raymond E	3639		39 79
Wildlung, Raymond E.	3681	Young, R. H. F	3732
Wile, Ivanka	3867	Yu, Shaw L 3611	3,32
Williams, George E	3733		
Williams, J. D. H 3666	3734	Zajic, J	3536
Williams, John W	3539	Zemaitis, W. L	3693
Williams, R. J. B	3584	Zubkoff, Paul L	3779
Williams, W. T	3734	Zubriski, J. C	3672
Williford, John W	3969	Zweig, G	4210
Willrich, T. L	3707	211026,	

